

POPULAR Computing WEEKLY

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16-22 October 1986

Vol 5 No 42

**SPECIAL
supplement**

Commodore plans 'fat' 64 micro

COMMODORE 64 Full story on page 6

The Pawn
- now out
on the 64

Astounding graphics
with Artist 64

Choosing disc drives
and cartridges

HARDWARE

Apple IIGS - An
Amiga performance
for less than £1000?

NEWS DESK

Amstrad scuppers
the clones

Saga confirms
Compliment launch
at Microfair



REVIEWS

Dandy
Arena
Fist II
and more

starts on p 14

TRACKER by Union Software

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TRACKER	UNION SOFTWARE	D	—	14.95	17.95	—	D	D	—
THE PAWN	MAGNETIC SCROLLS	—	D	—	19.95	19.95	—	—	24.95
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VERSIONS MAY VARY FROM DESCRIPTIONS ABOVE

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—	—	—	—	—	—	—	—	—
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GAMES►

14, 16 Reviews

A strong line-up this week, with some long-awaited releases seeing the light of day. Check out *Fist II* from Melbourne House, *Dandy* from Electric Dreams, *Leather Goddesses* from Infocom, *Arena* from Psygnosis, and more.



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Lots of pokes to help you through the trouble spots in *Dynamite Dan*, *Starion* and *BBC Airwolf*. Includes this week's Gallup Top Twenty.

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Tony Bridge gets lost in caverns of Global's *Monsters of Murdac*.

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The performance of the Amiga, at the price of the Atari ST? So the rumours go, anyway. Peter Worlock gives you the details.

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Another word processor for the Atari ST. How does *K-Word* match up to *First Word*, or *GemWrite*? Chris Jenkins knows the answers.

PC Outline

For all those who have ordered/are thinking of ordering the Amstrad PC, Tony Kendle thinks he's found the ideal desk-top utility.

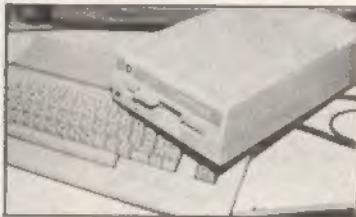
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Commodore plans expanded Ram for 64

COMMODORE is planning a series of launches in its 64/128, Amiga and PC ranges in the next few months. The Amiga range is to be expanded to include an entry-level machine with 512K and single disc drive for around £600 (see *Popular Computing Weekly*, September 18), while the 64 and 128 are to get a series of expansion packs that expand their memory by up to 512K.

According to Commodore UK general manager Chris Kaday there are no specific

plans to design new versions of the machine that have this amount of Ram on board, but he concedes that "as Ram gets cheaper it's a distinct possibility."

The fact that Commodore's main competition in the next year or so is liable to come from the Atari ST and from PC compatibles must however mean that it is more than a possibility, since if the company is to maintain its position in the home market it must produce powerful machines at a price the market is



The 128D: A clue to the new range?

willing to pay. A cheaper Amiga is one part of the strategy, but an expanded 64 would allow Commodore to differentiate better between its home and business ranges.

The add-on Ram for the 128, the 1750, is already out

in the US, priced at \$199 (around £130), with the 1764 pack for the 64 to follow shortly. Kaday currently can't say when the packs will arrive in this country, or what they'll cost, but in all probability they'll be with us soon, probably early next year.

Compliment launches at ZX Microfair

SAGA'S Compliment expansion unit for the Spectrum is to be launched at the ZX Microfair on 25 October. The unit, which consists of new keyboard, parallel interface, joystick port, disc drive, printer and bundled software will cost £344.

From the point of view of existing Spectrum owners the Compliment bundle looks good value. The disc drive is an Opus Discovery, which retails at £115, while the Compliment printer is a high quality 150 cps device. The addition of keyboard and software (*The Last Word*, *Trans Express*, *Masterfile* and *Omnicalc*) make the system substantially cheaper than the sum of its parts.

With the Amstrad 6128 and PCW 8256 as competition the Compliment looks less plausible as a completely new system, as the addition of Spectrum and monitor would bring the cost up to £500—£550, and the Amstrad machines are around £300 for 6128 (without printer) and £460 for 8256, but although a Compliment system would have less Ram (48K or 128K, depending on



White: Software on menu.

the model used) it does have advantages.

The Discovery, for example, uses cheaper 3½ inch discs, while the Compliment's printer is superior to the 256's. The software position is less clear cut, as while the Spectrum has vastly more entertainment software, it doesn't have access to the CP/M programs the PCW does, but this will be a matter of choice for individual users.

David White of Saga is particularly keen to extol the virtues of the Compliment Operating Environment, a menu-driven system that allows the applications to be loaded without recourse to Sinclair Basic.

Atari appoints former Commodore manager

ATARI'S new UK managing director is Bob Gleadow, who until recently was vice president with responsibility for Asia at Commodore International. Gleadow was with Commodore for 12 years, and was general manager of Commodore UK for the six years up to 1983, a time when Commodore under Jack Tramiel was threatening to engulf the world.

Tramiel left Commodore and took over Atari in 1984, and Gleadow is the latest of

the Commodore old guard to follow him there. As the man who unleashed the Commodore 64 on Europe (Hanover Fair 1982) he's something of a catch for Atari, and is expected to begin beefing up the company's marketing profile in the next few months.

A new UK marketing manager to replace Rob Harding, who left Atari recently in what was described as a "career move", is due to be appointed by Gleadow shortly.

Alpha backup system has it taped

ALPHA Microsystems has launched a videotape based backup device for the Amstrad PC. It takes the form of an interface which plugs into the machine's expansion port and allows data to be stored on a standard video recorder. A two hour videotape will hold up to 80Mb of data.

The device, which costs only £365, allows multiple copies of data to be recorded, and for people with access to a video recorder provides a low-cost alternative to tape

streamers for hard disc backup.

Details from Alpha Microsystems, Berkshire House, 56 Herschel Street, Slough, Berks SL1 1PY. Tel: 0753 821922.

Karate tops US charts

SYSTEM 3's *International Karate* has reached number one in the US software charts. The game is sold there by US software house Epyx, and is the second British game to top the US charts, the first being Firebird's *Elite*, which has been ringing tills round at BT since the CES show in the spring.

BT rubbishes closure story

SUGGESTIONS that British Telecom was about to pull out of the software business and close Rainbird, Firebird and Beyond were strongly denied last week. Head of BT Telecomsoft Ed Williams said that the position of BT's software labels was, if anything, improving, and that "British Telecom remains committed to games software."

The suggestions of trouble appear to be based on a deadline set by BT in April, which stated that the Telecomsoft division had a year in which to show a profit, with reviews every three months. According to one insider the first two reviews failed to show a profit, and the departures of Francis Lee from Beyond, Tony Rainbird from Rainbird and Barry Lewis, until recently head of Telecomsoft, have added weight to speculation that something was wrong.

"We're coming up to a very crucial period this Christmas," says Williams, and he admits to having spelled out to staff that the labels' BT

parent doesn't have "infinite patience", but he points out that much of the stable is starting to come good.

"A lot of good things have happened recently," he says. "Firebird has just done a large deal with Ariola for £1 million worth of exports to Germany." And, he says, "Firebird Licensees turned in its highest sales figures ever in September."

At the same time Rainbird has hits like *The Pawn* and *Star Glider* under its belt, and Firebird itself is scoring chart successes.

Beyond is not, however, currently sharing in that success, and seems close to missing the Christmas market with *Star Trek*, this year's big production number. The ST version of the game is nearly ready, says Williams, but it still has to be approved by Simon and Shuster, the US publisher which licensed the title to Beyond. Alongside this, 8-bit conversions of the game have proved to be "very complicated".

January launch for Philips MSX 2

PHILIPS is thought to be planning to release its MSX 2 micro in this country, although the company denies that the machine will be launched here as a stand-alone machine. According to Steve Paul, marketing manager of Philips' consumer electronics division, it's probable that when it arrives here it will be sold as part of a complete video-based system rather than into the home computer market.

Such a system would use a laser disc and the MSX 2 machine to edit digitised video frames, add subtitles and so on. Pamela Ladd of Philips' interactive media systems division, which is likely

to be handling any such system, refused to comment on potential launches, but said that further information might be available shortly.

If Philips does take the video route it will be following on JVC's initiative. The latter company sees video and audio as logical paths for the MSX standard to take, and has configured its MSX 2 machine to attack vertical markets in these areas.

Graham Knight of leading MSX dealers Knight Computers has sold a number of JVC machines, and confirms this. "We're selling to people who are video buffs, and the machines go in the same way as Video 8 and video cameras."

Software Hotlines

Who said there was no money in adventures? **Incentive Software** has just announced that they've sold one million pounds worth of **Graphic Adventure Creators** – and that's a lot of pixies. Of the vast number of GAC generated adventures received by the company, the best are given the Gold Medal Award... indeed Incentive will be marketing the first two of these, *Apache Gold* and *Winter Wonderland* towards the end of November for £7.95. Which strikes me as being rather a lot.

How's this for bad taste? Remember *Mad Doctor* – in which you had to dig up graveyards in search of limbs to make up your Frankenstein? Now try *Mad Nurse* from **Firebird**.

In this game, you control a variety of nurses (with names such as Brenda Bumwash... yes... it is that tasteless), running around levels of a ward, picking up babies before they stick their cute little fingers down electric sockets, or swill the contents of specimen bottles – both hilariously fatal.

Conservative MPs will be outraged, Boots will ban it and it's a sure fire hit. File it under 'warped' along with *Di's Baby* and *Driller Killer*.

Electric Dreams seems to be coming along nicely



Alien

with *Aliens* – with the game due for release mid-November on Spectrum, Amstrad CPC and Commodore 64.

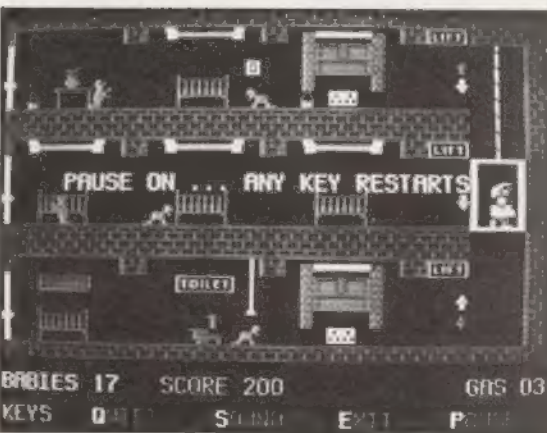
If you've seen the movie (or clips from it) you'll remember that one of the main action sequences has a platoon of Space Marines working their way through the Alien infested complex.

Aliens The Game has you controlling six marines from the Mobile Tactical Operations Base, selecting one at a time and viewing the complex through their own personal TV cameras. The general aim of the game is to shoot, maim, kill, etc – with the ultimate aim of getting the team through to the Alien Queen's lair, but has significant strategic factors... if the Aliens take over the generator room for instance... it all goes dark.

Hey! Remember *Nexus* – the pencil case that came with a free computer game? Well now *Nexus* (the company) has announced its next release for the 64 – *Assault Machine*. Can't wait.

The **US Gold** juggernaut rolls on – it's signed up US biggies **Broderbund** – that means £2.99 oldies.

John Cook



Mad Nurse

Amstrad block on clone Wordstar

AMSTRAD'S entry into the business software market seems to have run into trouble before it has even started. According to MicroPro, which produced *Wordstar 1512* for the Amstrad PC, the program will run on practically any PC compatible machine. But it appears that Amstrad, which has sole publishing rights to the program, has doctored it so that it will not — not even on an IBM PC.

The problem lies in the installation procedure, which has been modified so that it is specific to the Amstrad PC. It is possible to install the program so that it will work with other compatibles, but not by using the install program on the discs supplied by Amstrad, as this seems to be where the "log breaker" has been inserted.

MicroPro's technical support department was unaware of the problem when contacted, while Amstrad technical support said it couldn't help, and asked for the query to be put in writing. Such queries are then apparently forwarded to MicroPro.

Reception at the latter incidentally suggests that queries about *Wordstar 1512* should be taken up with Amstrad.

In default of support from author or publisher it's the dealers who will have to fend off most of the queries. Softshop's Amstrad Business Centre is a stockist of both the PC and *Wordstar 1512*, but hadn't run into the installation problem.

Naturally enough most dealers will have installed demonstration programs on the Amstrad PC, and therefore aren't likely to spot the problem until owners of other clones start complaining the product doesn't work.

MicroPro, which has assigned Amstrad sole marketing rights to the program, is unlikely to be best pleased about the situation, while other software houses with product being published by Amstrad will be similarly concerned.

While it may be in Amstrad's interest to limit the machines that software runs on it certainly is not in theirs.



AM's Vicom package

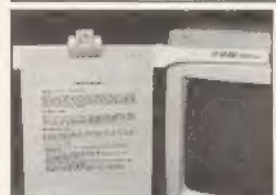
DR plans a range of new packages running under Gem

DIGITAL Research is planning to launch Gem-based communications, spreadsheet and database packages in the near future. The communications package, *GemComm*, is based on A M Technology's *Vicom* package, recently converted from the Macintosh to the PC, and is expected to cost around £150.

DR is, however, being cagey about the database and

spreadsheet, admitting that it intends to launch products but refusing to comment on what or when.

The two packages are apparently being bought in rather than developed in-house, and are liable to be low-cost, fitting in with the company's current policy of pricing Gem software at levels that will allow it to sell to Amstrad PC users.



Thingi

Thingi of beauty, say judges

OVERBASE'S "ergonomic computer copy holder," Thingi, has been named Business Idea of the Year by a collection of companies that includes British Telecom, Marconi, Champion Spark Plugs, Cadbury Typhoo and the Midland Bank.

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Commodore admits to new chips

COMMODORE has confirmed that it is working on enhanced versions of the Amiga's Agnus and Denise custom chips for future versions of the machine. The Amiga's Agnus chip currently controls 512K of the machine's display memory, which at the time of design seemed adequate for display purposes, but is now being upgraded to handle a full 2Mb.

Together with the upgraded Denise this will allow future versions of the Amiga to handle more detailed graphics much faster. More news of the new Amigas is expected at the November Comdex show in the US (see *Popular Computing Weekly*, September 18).



Eyles loses face

Footnotes

As our picture shows, Mark Eyles is keeping some pretty strange company these days. He is not in fact discussing *Alien 2* with an Electric Dreams executive, but instead is demonstrating a pop-out extra to be included in the game's packaging. Don't open the box till you get it home...

IBM bids to bring clones to heel

IBM began preparations for a counter-attack against the clone manufacturers last week by linking up with chip manufacturer Intel in a technology exchange agreement.

IBM's problem so far has been that both the operating system and processor for its PC series has been readily available, so companies like Amstrad have been able to produce IBM lookalikes and carve out a slice of IBM's market.

The new agreement however allows IBM to use tailor-made Intel chips, so if IBM continues to set the standard it will be illegal to copy it.

This will call into question the whole concept of IBM compatibility.

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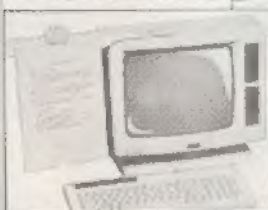
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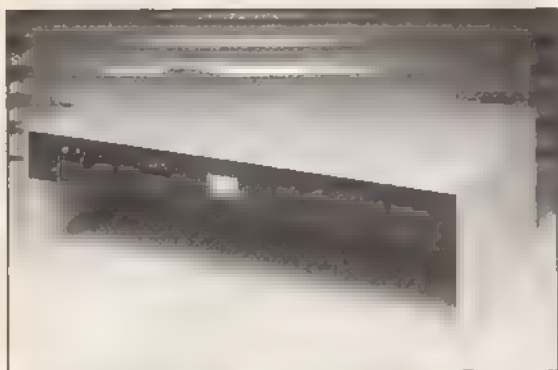
Dept 11, Unit 8, Short House, Riverway, Harlow, Essex CM20 2DW
Tel 0278 26473 (24h answering) or 31958 during office hours

ANCIENT & MODERN

[illegible]

Cheques/POs payable to:
Ancient & Modern
Unit 111, Bland, Washington Road, West Wilts Trading Estate, Westbury, Wilts.

CHINESE UNIVERSITY OF PETROLEUM



Akhter carries on streaming with BBC backup box

AKHTER is to launch the Archive drive, a combination 1Mb floppy drive and 10Mb tape streamer for the BBC. The tape streamer's software can produce a mirror image backup of a Winchester or can handle both individual files and directories.

The floppy drive is switch-

able between 40 and 80 track, and is housed alongside the streamer in a unit which fits over the BBC machine.

The complete unit costs £999.95.

Details from Akhter Group, Akhter House, Perry Road, Staple Tye, Harlow, Essex CM18 7PN (0279 443521).

Expansion for the Amstrads

THE Velleman interfacing system for the Amstrad CPC machines consists of a series of kits or ready built units based on a four slot motherboard. The motherboard connects to the computer's disc drive port and provides an additional disc drive connec-

tor, allowing the system to be used at the same time as other peripherals.

Plug in interface cards which can be used with the Velleman include an eight channel analogue input multiplexer, A/D and D/A conversion, Centronics printer port, eight channel logic input, real-time clock and a general purpose output card. The kits start at £42.20.

Details from Electronics and Computer Workshop, 171 Broomfield Road, Chelmsford, Essex CM1 1RY (0245 262149).

Blow your own on BBC series

MULTIPROM is an Eprom programmer for the BBC series, and is compatible with all models from BBC B up to Master. The UVP 1.1 software can run in sideways Ram if required, and enables an Eprom to be programmed from any file on a disc.

The Multiprom takes its power from the computer, and is fitted with dip switches which allow it to be configured to handle a number of different types of Eprom. The Multiprom costs £44.95, while the UVP 1.1 Rom is £5.

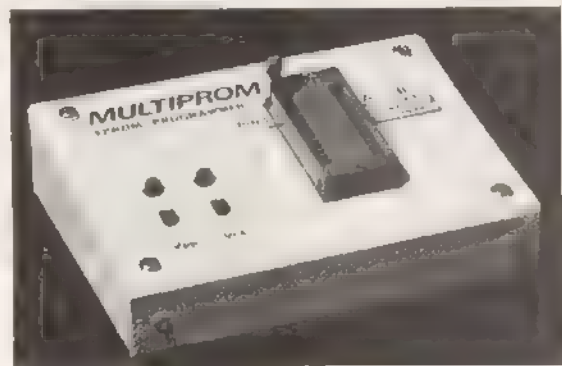
Details from Ground Con-

trol, 4 Alfreda Avenue, Hullbridge, Hockley, Essex SS5 6LT (0702 230324).

Budget WP pack for Amstrad PC

VUMAN Computer Systems' Vuwriter word processor has been adapted to run on the Amstrad PC and will be launched at £57.65 in November. The program supports a wide range of printers, and offers an extended character set which provides italics, European language characters and box drawing in addition to the standard typeface. Underlining, bold, superscript and subscript are also available.

Details from Vuman Computer Systems, Enterprise House, Manchester Science Park, Lloyd Street North, Manchester (061 226 8311).



Diary Dates

OCTOBER

25 October

20th ZX Microfair

Central Hall, Westminster, London SW1

Details: Sinclair machines, hardware and software support.

Price: £1.50 adult, £1 children for advance sales, £2 and £1 on the door.

Organiser: Mike Johnston, D1-8D1 9172.

Organiser: West Midlands Amstrad Users Group, 021-420 1915

30-31 October

Hampshire Computer Fair

Guildhall, Southampton

Details: Business computers.

Price: Free entry by business registration.

Organiser: Testwood Exhibitions, 0703 31557

NOVEMBER

7-9 November

Electron and BBC Micro User Show

New Horticultural Hall, Graycoat Street, London SW1

Details: Hardware, software and peripherals for the Electron, BBC micro and Master series.

Prices: £3 adults, £2 children, £1

discount for advance booking.

Organiser: Database Exhibitions, 061-456 8835.

8 November

UKEUG National Einstein Show

National Motor Cycle Museum,

Birmingham

Details: Einstein software and hardware

Price: Free.

Organiser: UKEUG, 07982 2399.

15 November

Wales and West Computer Show

Central Hotel, Cardiff

Details: All types of home computer and support.

Price: £1 adult, 50p children.

Organiser: Preston Exhibitions, 0658 880865

29 November

Wight Computing Fair

Ryde Town Hall, Ryde, Isle of

Wight. Details: Local show covering wide range of subjects

Price: N/A.

Organiser: Wight Computing Users Group, John Street, Ryde, Isle of Wight PO33 2PY

27 October

Computer Club 86

Blue Coat Comprehensive School, Birmingham Road, Walsall

Details: Mainly Amstrad but includes Sinclair corner

Price: 25p

Prices, dates and venues of shows can vary, and you are therefore strongly advised to check with the show organiser before attending. Popular Computing Weekly cannot accept responsibility for any alterations to show arrangements made by the organiser.

STs make light work

I find the comparisons being made in *Popular Computing Weekly* between Atari STs and IBM PCs and their Amstrad clones quite strange. Our expedition has both an Atari 1040 STF and an IBM PC XT - the latter enhanced with an 8087 maths co-processor and a vast software library. There is, in my view, little comparison at all between the two machines. We still like and use the IBM, but it does after all run yesterday's software (which generally costs a great deal more), and is far more suited to the corporate environment than small users such as ourselves.

In contrast, the Atari makes light work of whatever we throw at it, from inverting 100×100 matrices using APL68000, to heavy database work, even fancy graphics. The Atari uses tomorrow's software, at realistic prices, and having Gem in Rom means that we can deal with a consistent friendly user interface. I do not even feel compelled to use a hard disc, as the high-capacity floppies and occasional use of Ram discs from 360K to 650K in size makes one a luxury.

The Amstrads may seem a wonderful bargain now, but I fear that in two or three years

time, they will be as exciting and useful as the ZX80 is now, whereas our Atari will still be at the 'leading edge'.

Howard Oakley
Database Manager
Joint Services Expedition to
Brabant Island
Antarctica

Searching for Micro Prolog

In your July 3 issue, you published a series on alternative languages, and I became particularly interested in Micro Prolog for the Spectrum.

However, I have been unable to find anyone to date who can supply me with a copy, or, come to that, who has even seen it!

I ordered a copy from Sinclair Research, quoted as the suppliers in your article, but they returned my cheque and said they were unable to help.

Can you please advise on anyone who can provide one?

L W Tyler
Cheltenham

The company which originally wrote Sinclair's Micro Prolog is LPA (Logic Programming Associates), of Studio 4, Royal Victoria Patriotic Building, Trinity Road, London SW18 3SX. It is possible that the rights of Sinclair's Micro Prolog have now reverted to LPA - try

writing there for information.

Meanwhile, if anyone else knows of a Spectrum Micro Prolog package, we'd be happy to hear from them.

French without tears

I own a 48K Spectrum and have many games for it.

As I am soon visiting France I wondered if it was possible to load French games on an English Spectrum, and if so, would any text be altered as I would buy an adventure. Could you name any decent French adventures?

Alex Skinner
Norwich

There should be no problems loading French software into your Spectrum. However, as you probably know, you will need to buy an adaptor for the Spectrum itself, in order to enable you to plug it in in France.

As for text changes, *Load* and so on, is identical. Otherwise, how good is your French? While some UK adventures (such as *The Hobbit*) have been exported to France with screen messages and responses in English, France has a thriving software base of

its own, and no particular desire to publish home-grown software in a foreign language!

Decent French adventures? Try *Loricels* or *Infogrames*, two of the leading French software companies. The latter certainly has a good catalogue of adventures, judging by the ones which are now becoming available over here.

Lost connections

I refer to the recent correspondence in your magazine about the Centronics GLP. I bought one about two months ago to use with my CPC464. I purchased from Boots its Connections tape and connecting lead but to date I have been unable to get the printer to work. Can anyone tell me how?

Gareth Doherty
15 Ednamount Road
Derry BT48 0DB
N Ireland

Wanted: B Baxter

Following the publication of Address Master program for Amstrad computers by B Baxter in the May/June editions of *Popular*, I forwarded a cheque for

Puzzle

Puzzle No 229

I have five cards on which I have written the following digits:



If I lay them in a row as shown, the five-digit number so formed, 11939, is a prime number. I take the card from the left-hand end of the row and move it to the right-hand end, I still get a number that is also prime (19391). By repeating this procedure I can make a further three primes before arriving at my starting value again.

Can you say what other sequence of digits I could have written on the five cards that would also produce this effect?

Solution to Puzzle No 224

The only other possible combination of books is:

$$6 \times 29 = 174 = 58 \times 3$$



We need to find a three digit product which results from multiplying a single digit number by a two digit number, in two different ways. Further the nine digits used must be the digits one to nine without repetition. Clearly this can only happen if the smaller of the single digit numbers is multiplied by the larger of the

two digit numbers, and vice-versa.

In the program lines 10 and 20 generate different combinations of one digit numbers, and lines 30 and 40 the two digit numbers. Line 50 tests to see if the product of the pairing of A with C is the same as the pairing of B with D. Any values that are not equal are rejected.

Duplication of digits are tested for in lines 60 to 110, by placing all relevant values into string format (Z\$). Lines 80 to 110 check every digit against every other digit in the string. Any acceptable values are printed out.

Winner of Puzzle No 224

The winner this week is John McCarthy of Mansfield, Notts. who will be receiving £10.

Rules

The closing date for Puzzle 229 is November 3. Answers on a postcard please.

£2.50 to the author at PO Box 17, Burnham-on-Sea, Somerset TA8 1DT, with a request for a copy of the listing.

Despite repeated follow-up letters, I still have not received the tape.

My cheque drawn on June 10 was cleared through my bank account on June 20, and this is clear evidence that my original letter was received by B Baxter.

As only a PO Box number was given I am unable to pursue this on a direct basis with B Baxter.

W L Barker
Gravesend
Kent

B Baxter, please come forward and sort this matter out!

brought right up to date there is nothing outside random-accessed disc-based games to touch them for depth and atmosphere (and some would argue ...).

At £19.95 is there better value for the host of new PC owners?

Hugh T Walker
Guildford

Matters arising

I have some queries, arising from articles in *Popular*. September 11 I have a Pioneer PX-7, graphics tablet and an Amstrad DMP 2000.

Expanding the Amstrad DMP-2000's buffer to 8K. The chip required is a 6164 from RS. Who is RS?

Lastly, Big Text by Steve Dunn. Is it possible to get hold of the full programme, or more information, so that a programming illiterate, as I am, can make the thing work?

Bernard Leighton
Birmingham

The chip required for the buffer is actually the 6264. RS stands for Radio Spares, and can be contacted at Lammas Road, Weidon Industrial Estate, Corby, Northants NN17 9RS (0536 201201).

As for BigText, it will run perfectly so long as the program is typed in correctly. However, it will only do this on a Commodore 128. Could this be your problem?

Eat your heart out, Atari

Early this year I 'upgraded' from a Commodore 64 to an Atari ST, a micro often referred to as a "supreme games machine" with arcade quality graphics and sound.

Well, it didn't take me very long to find out it had neither of these qualities. When it comes to graphics, the ST can only handle four colours on its hi-res (640 x 200) screen and that is so restrictive that most games use the low-res (320 x 200) 16 colour mode, which is no great improvement on cheap existing eight bit machines.

Although it is possible to connect Midi equipment, this is a rather useless feature

when it comes to playing games; the built-in AY3-8910 sound chip (also used in the 128K Spectrum and Amstrad CPCs) is a downright insult to the whole ST concept. It sounds awful and doesn't even come close to the Commodore 64 sound output.

Needless to say, I have sold my ST and recently bought a Sony MSX-2 computer - several MSX-2 micros are already on sale on the continent - and I just couldn't resist telling you about this superb machine.

Just picture this: built-in 3½ inch disc drive, 256K free Ram, an additional 128K video memory, a 512 x 512 hi-res screen that allows the use of 256 on-screen colours, and on top of all that a sound chip that will blow your mind.

Eat your heart out, Atari.

Peter Nijls
Belgium

Before we all completely desert the Atari STs in favour of MSX 2, it is worth pointing out that Atari's low-res 16 colours are selected from 512 and are true multi-colour, ie, all 16 colours can be in one square. Comparative lack of colour in higher resolutions can be circumvented, cf *The Pawn*.

Anyone who's heard the music on *StarGlider* will have judged for themselves how 'awful' the ST's sound is.

And in conclusion, the ST may be a 'supreme games machine', but that's in addition to its business and utility capabilities.

CDS special offer in chess tournament

Popular's Readers vs Colossus tournament is beginning to sort out the knights from the pawns, as you can see from the latest moves printed below.

In Game one, the Readers team is playing Black, and overwhelmingly voted to move another pawn, from d7-d5 (see below). Colossus has replied with Pe4xd5.

In Game two, you're playing White, and elected to even matters up by taking Colossus's pawn at d4 (see below). Colossus's next move is Pe7-e5.

So, it's all up to you again. Send your suggestion for the Popular Readers' next move in each game to *Popular Chess*, Unit 2, (yes, they've moved down the road!) South Block, The Maltings, Sawbridgeworth, Herts CM21 9PG, to arrive by October 22.

The most popular suggestion will be entered into the game, and Colossus will come up with its reply.

Special offer

While the reader who makes the most number of accepted moves at the end of the games will win a reproduction Arran chess set, CDS, publisher of *Colossus Chess*, has

offered runners-up prizes of a copy of *Colossus Chess* itself.

These will go to the five people who make the most suggestions, ie, the most consistent entrants (well, it'll make up for some of that postage, won't it?) The rider to this is that you can only make one suggestion per game - each move.

Colossus Chess is available for the Spectrum, Commodore, Amstrad CPCs and PCWs, BBC, Electron, and Apple II.

The games so far

Game One

1 Pe2-e4	Pe7-e5
2 Ng1-e3	Nb8-c6
3 Bf1-c4	Ng8-f6
4 Nf3-g5	Pd7-d5
5 Pe4xd5	?

Game Two

1 Pe2-e4	Pc7-c5
2 Ng1-f3	Nb8-c6
3 Pd2-d4	Pc6xd4
4 Kf3xd4	Pe7-e5
5 ?	

In our next chess report in two weeks' time, we'll mention some of the names who are currently in the running for the prizes.



"It's not much fun backing up 80 megabytes of data, but it's more interesting than 'Wogan'."

Jewels in the crown

To those who already have the original versions of Level 9's *Midle Earth Trilogy* and who question the point of buying Rainbird's *Jewels of Darkness*, the answer is Yes.

The new versions are so much more playable with the complex parser with the complex parser and other recent Level 9 advances. Those whose machines allow the Ram disc features will find the gameplay raised to a new dimension.

Colossal Adventure Quest and *Dungeon Adventure* have always been wonderful games. With the presentation

Fist II arrives

Sequels are usually a disappointment, and to my great regret *Fist 2* does nothing to break the mould. An incredibly-delayed follow-up to *Way of the Exploding Fist*, its 'adventurified' scenario adds little to the concept of the original.

As before, you control a fearless warrior, capable of making a number of realistic combat moves under keyboard or joystick control. If you played *Fist 1* you can play *Fist 2*; controls are exactly the same, to begin with. The difference is that instead of be-



ing limited to a static background, with progressively more adept but otherwise identical opponents, in *Fist 2* you can move through over 100 different screens, fighting many different types of warrior, plus snakes, bats and other menaces.

Sounds great, unfortunately the animation is slow, the backgrounds drab, and the atmospheric music does little to alleviate the boredom. If you lose a life you go right back to the start of the game (intensely annoying), and your main quest - to find magic scrolls in order defeat the evil warlord - is both unoriginal and unimaginative.

At one stage your warrior must find a temple in which meditate and regain energy. Lying curled up on the floor in a foetal position, he seems to express my feelings about this game. Bring back *Fist 1*.

Popular Appeal ♦♦

Chris Jenkins

Program *Fist 2* **Micro**
CBM 64 **Price** £9.95
Supplier Melbourne
House, 60 High Street,
Hampton Wick, Kingston
upon Thames, Surrey KT1
4DB.

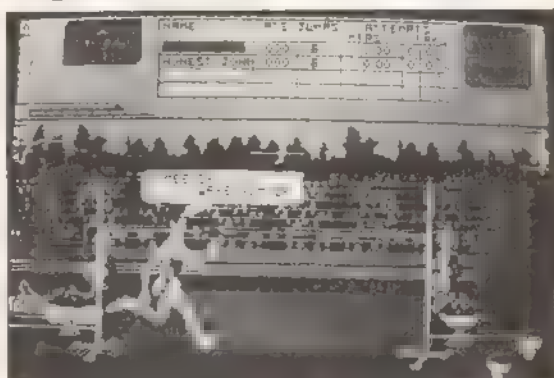
Quality graphics in Arena

It may be old hat on some machines, but the ST software market isn't exactly overflowing with athletics simulations at the moment so it's nice to see *Arena* from Psygnosis, the people who brought you *Brattacas*.

The game, then, comes in a decent sized box containing two discs and features six events. Namely, the 100 metres, long jump, high jump, pole vault, shot putt and javelin.

Okay, so on with the action and clicking on the menu for a new game. At this point beware that pressing the *Shift* key when typing in your name causes the computer to hang up! Having avoided that you can then compete in the events in any order you wish.

The graphics are the biggest plus factor for *Arena* as they are large, colourful and reasonably well detailed. Unfortunately the very size of the graphics leads to the animation being fair in parts and pretty lurchy in others. The shot putt in particular is something of a joke as the



putter doesn't even rotate on the build-up to the throw.

My other complaint about the game concerns the 'referee' type figure which shuffles onscreen after each event and offers various pieces of usually sarcastic advice. This is faintly amusing the first time round but soon, very soon, it becomes as funny as having your toe nails pulled out as you wait and watch the same old witless comments come up.

However, despite these shortcomings, and the fact that the pole vault and high jump events take too long to complete, *Arena* has quality graphics and is very playable.

Popular Appeal ♦♦♦

Duncan Evans

Program *Arena* **Micro**
Atari ST **Price** £29.95
Supplier Psygnosis, 1st
Floor, Port of Liverpool
Building, Pier Head, Liver-
pool L3 1BY.

Infocom's whipping yarns

I never thought I'd see the day when my word processor would issue such sentiments - but the day has come.

Here is an Infocom adventure which is less than totally brilliant. Sorry, I know it's a shock, but there you are. Perhaps you'd like to go and lie down quietly for a while.

Leather Goddesses of Phobos is not a bad adventure. God forbid. The possibility of Infocom releasing a bad adventure is beyond the comprehensive of mere mortals. It's just... er, well... not quite up to the usual Infocom standard.

The storyline is splendid - a sort of Flash Gordon scenario set in the 1930s with you, the hero, kidnapped by the soon-to-be infamous leather goddesses. You quickly end up on Phobos, a tiny moon in orbit around Mars.

Your main task is to thwart the leather goddesses in their plan to enslave all humans on

Earth. On the way, there's a lot of exploring to do, much puzzle-solving, and a deal of humour.

Here we encounter problem number one. Much of the humour struck me as unfunny.

Leather Goddesses being promoted as a kind of adult, naughty adventure. What it

the Donald Dock, among others.

Author Steve Meretzky was the co-author of the unspeakably brilliant *Hitchhiker's Guide to the Galaxy* and you can detect the influence here. Not enough of it, unfortunately.

Leather Goddesses is still

"you'll find such delights as the Wattz Up Dock, and Donald Dock"

is, is Carry On Spaceman with too much of the humour depending on parts of the female anatomy and bodily functions that most of us (I hope) ceased to find funny a long time ago.

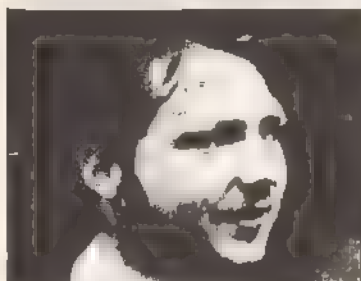
Not all of it, thankfully, depends on this obsession with tits and toilet smells. Some of it is funny in an offbeat way. For example, on the Martian surface you'll need to explore a system of canals and docks. Here you'll find such delights as the Wattz Up Dock, and

head and shoulders above most adventures - but I trust this is just a temporary setback, and doesn't mark the decline of this truly great software company.

Popular Appeal ♦♦♦

Peter Worlock

Program *Leather Goddesses of Phobos* **Micro**
Commodore 64/128 **Price**
£24.95 (disc only) **Sup-
plier** Activision, 23 Pond
Street, London W3.



An infinite variety

Tony Kendle picks a selection from the games pokes received recently

Before we get on with dealing with the long awaited and ever growing *Knight Tyme* file here are a collection of pokes for the BBC and Spectrum.

Paul Miller of Waddon has come up with a cheat routine for 255 lives in the Spectrum version of *Starion*, which he points out is an improvement on the pokes we printed a few months ago for reducing the rate of life loss.

Starion routine

```

>REM STARION for SPECTRUM
BY PAUL MILLER OF WADDON
10 REM LO LOAD
20 DATA 221,23,0,100,17,200,2
30 DATA 221,23,0,200,20,5,201
40 FOR I=0 TO 255
50 READ J:POKE J,255
60 RANDOMIZE USA 65522
70 POKE 255+J,255 REM LIVES
80 REM TO SAVE
90 POKE 65523,194
95 POKE 65524,4
99 PRINT "B",
100 "Start tape and press any key"
105 PAUSE 0
110 RANDOMIZE USA 65522
115 PRINT "B",
120 "Program saved reload starion"
125 LOAD ""
    
```

Once the game has loaded, save your position by pressing *Break* and 2. Reset the machine and enter the following program, run it and then load your saved game. This will be changed to give you the extra lives and should then be re-saved. You can later reload this into *Starion* for the extra lives.

Paul has also sent a poke for *Hellfire* - *Poke 29137.n* where *n* is the desired number of lives.

Mark Gidley wrote a few weeks ago with some pokes for the BBC and has sent two more (see right), complete with loaders this time so all you have to do is enter them, save them, run them and play the game tape from the beginning.

Dynomite Dan 2 - infinite energy

```

DYNOMITE DAN 2 - INFINITE ENERGY
BY MARK GIDLEY
10 REM LO LOAD
20 DATA 221,23,0,100,17,200,2
30 DATA 221,23,0,200,20,5,201
40 FOR I=0 TO 255
50 READ J:POKE J,255
60 RANDOMIZE USA 65522
70 POKE 255+J,255 REM LIVES
80 REM TO SAVE
90 POKE 65523,194
95 POKE 65524,4
99 PRINT "B",
100 "Start tape and press any key"
105 PAUSE 0
110 RANDOMIZE USA 65522
115 PRINT "B",
120 "Program saved reload starion"
125 LOAD ""
    
```

BBC pokes: Airwolf - infinite shields

```

10REM Airwolf - infinite
shields
20XT.
30FOR I%=1000 TO 1899 STEP 4:
READ A%: I%=A%:NEXT
40CALL 1800
50:
60DATA 189C800A0,1E32D1848
70DATA 1D03FC0FF,1A218A0F5
80DATA 1FFF72092,14E8D18A9
90DATA 18D21A918,1604C184D
100DATA 18DA9A919,163A979FE
110DATA 18A979FF8D,17A008D8D
120DATA 1018D64A9,18D0DA97A
    
```

```

130DATA 14CA97A02,1A97A038D
140DATA 17A048D00,1038B09A9
150DATA 179004C7A,172694186
160DATA 16666C6F7,16666E6983
170DATA 174696E69,168732065
180DATA 1646C6369,120202073
190DATA 120202020,120202020
200DATA 120202020,188202020
210DATA 173657250,16C702073
220DATA 16F207961,1617420A6
230DATA 1000D6570,100000000
240DATA 12E4C0000,16C4F5722
250DATA 10D223246
    
```

Bug Eyes - infinite lives

```

10REM BUG EYES - INFINITE LIVES
20XT.
30FOR I%=1000 TO 1899 STEP 4:
READ A%: I%=A%:NEXT
40CALL 1800
50:
60DATA 189C800A0,1E32D1848
70DATA 1D03FC0FF,1A218A0F5
80DATA 1FFF72092,14E8D18A9
90DATA 18D21A918,1604C184D
100DATA 18DA9A919,163A979FE
110DATA 18A979FF8D,17A008D8D
120DATA 1018D64A9,18D0DA97A
    
```

```

130DATA 14CA97A02,1A97A038D
140DATA 17A048D00,1038B09A9
150DATA 179004C7A,172694186
160DATA 16666C6F7,16666E6983
170DATA 174696E69,168732065
180DATA 1646C6369,120202073
190DATA 120202020,120202020
200DATA 120202020,188202020
210DATA 173657250,16C702073
220DATA 16F207961,1617420A6
230DATA 1000D6570,100000000
240DATA 12E4C0000,16C4F5722
250DATA 10D223246
    
```

Mark is still looking for pen pals, so write to him at 296 Newton Road, Northamptonshire, NN10 0SY.

Stuart Mitchell of Knaresborough has sent an "infinite energy poke for *Dynomite Dan 2* (Spectrum). It is probably the best platform game ever and the music is worth buying the game for!

"The listing gives protection against all objects that sap energy except Dr Blitzen and water. Simply type it in and run it and load your game - the first block won't load, but this is intentional."

Thanks for these, all of you, now has anyone got tips for my current favourite game, *Frost Byte* from Mikro-Gen?

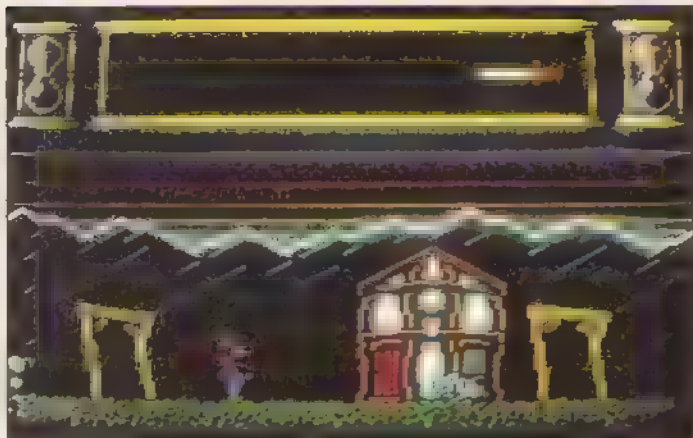
Charts

Top Twenty

- 1 (1) Paperboy
- 2 (-) Lightforce
- 3 (2) Druid
- 4 (3) Thrust
- 5 (8) Speed King
- 6 (9) Ninja Master
- 7 (12) Ninja
- 8 (5) Trivial Pursuit
- 9 (7) Dragon's Lair
- 10 (-) Pub Games
- 11 (-) Streethawk
- 12 (-) Video Poker
- 13 (4) Go for Gold
- 14 (15) ACE
- 15 (-) Strike Force Cobra
- 16 (13) Dan Dare
- 17 (14) Alleykat
- 18 (11) Kane
- 19 (15) Warhawk
- 20 (-) International Karate

All figures compiled by Gallup/Microscope

- Elite
- Faster Than Light
- Firebird
- Firebird
- Mastertronic
- Firebird
- Mastertronic
- Domark
- Software Projects
- Alligata
- Ocean
- Mastertronic
- Americana
- Cascade
- Piranha
- Virgin
- Hewson
- Mastertronic
- Firebird
- System 3/Endurance



Take heart

It's not often that we bother to review versions of games that make it onto other machines – the reason is simple.

If a conversion is good, then the game will be exactly like the old version, so there is little point in going over old ground. If it is bad, well, it's so obvious that it doesn't need the likes of us to point it

out. But the Amstrad version of *Heartland* (previously on Spectrum) is something exceptional.

On the Spectrum, you might remember, it was very well received as an atmospheric, well designed arcade adventure. However, on Amstrad, although the total number of locations is smaller (and the map slightly differ-

ent) each location and character has been totally redrawn in 16 glorious colours with some very smooth scrolling and animation thrown in. The result is simply the best looking arcade adventure yet on the PC machines – and pretty good sound to boot. The game plot has your good self striding through *Heartland* in search of the 12 pages that make up the final chapter of a book – six 'light' pages that must be collected and six 'dark' pages that must be destroyed. There are two pages on each of the first four levels, The Garden, Moonbase, The Caves and The Castle, with four residing in The Village. To complete a level, you must collect both pages then return

to your bed – for the whole thing is a dream... or is it?

On completion, another section of graphics code is loaded in – around 128K over all levels – but it shows.

Each has distinctive scenery and monsters that has set a new standard for Amstrad games. Not that *Heartland* is just about graphics.

The gameplay will stretch your mapping skills and the time limit will ensure you don't hang about.

It does lack pause and save facilities – surely things no full price game should be without – but believe me, the charm and instant visual appeal of *Heartland* should have you hooked.

Popular Appeal ♦♦♦♦

John Cook

Program *Heartland Micro*
Amstrad CPC Price £9.95 (tape) £14.95 (disc)
Supplier Odin Computer Graphics, First Floor, 764-67 New Oxford Street, London WC1A 1EU.

Dandy – running the gauntlet

So here it is – the best of the full price 'hack and slash' Gauntlet-style games to hit the market, being preceded by *Storm* (Mastertronic) and *Druid* (Firebird), with the US Gold offering coming later in the year.

The similarities between all four games makes you wonder exactly what a company is buying when it licenses a coin-op – really, the bottom line is that it's just the name – no matter how much chest beating goes on. And although the 'big name' equals 'money in the bank', it's no sure indicator of a good game.

Dandy, of course, isn't a big name. No one had heard of the thing outside of Atari, until a nifty bit of research by someone showed that this college programming thesis was, in fact, the basis of the hit arcade stand-alone *Gauntlet*. Enter Electric Dreams, and now via Ram Jam we have the home computer version... and it's not half bad.

Looking down on the action

from above, one or two players can scythe through the masses of nasties, gobble food for extra energy, find spells and very importantly, keys, that will get you past otherwise impassable barriers. Hint number one – don't shoot keys.

The game does not feature full scrolling, it flips from one full screen to another when one / both players reach the screen boundary, with 12 screens per dungeon level.

But anyway you look at it, *Dandy* is an excellent little game – superior to Spec-

trum *Druid* in the graphics and genocide dept, although it contains less in the way of puzzles and strategy.

The two player option probably gives it the edge – so if you are in the market for

a fantasy coin-op clone right now – queue here.

Popular Appeal ♦♦♦♦

John Cook

Program *Dandy Micro*
Spectrum Price £7.99
Supplier Electric Dreams, 31 Carlton Crescent, Southampton SO1 3EN.



That all-round nice guy, Richard Lang

*Martin Bryant (pictured right) profiles Richard Lang, author of **Cyrus** and **Psion Chess**, and creator of the **Mephisto Amsterdam** chess machine*



This month's column features a profile of the computer chess programmer, ex-London marathoner, and all-round nice guy, Richard Lang.

Richard is responsible for the **Psion** range of 16-bit chess programs, and for the **Mephisto Amsterdam** dedicated chess machine. During the past five years his success in many European and World championships has proved him to be probably the top computer chess programmer in Britain, and certainly one of the best in the world.

Richard started writing his first chess program in early 1981 on a home-built **Nascom-2** computer with a 4MHz 280 processor.

In September 1981 his **Cyrus** program won the European Microcomputer Chess Championships in London, winning all its five games. This gave Richard the impetus to leave his job as a research scientist, and he started work with David Levy's chess programming company **Intelligent Software**. Over the next few years he programmed **Cyrus** to run on several home computers and dedicated chess machines.

In 1984 he went freelance in order to be able to write a new program designed for 16-bit machines. The resulting program, **Psion Chess**, was a joint winner in the 1984 World Microcomputer Chess Championships, held in Glasgow as part of the Scottish Chess Federation's Centennial Year. The program was published by **Psion** for the **Sinclair QL**. As well as having outstanding chess play, it was the first to give the option of a stunning 3D-graphics boards display.

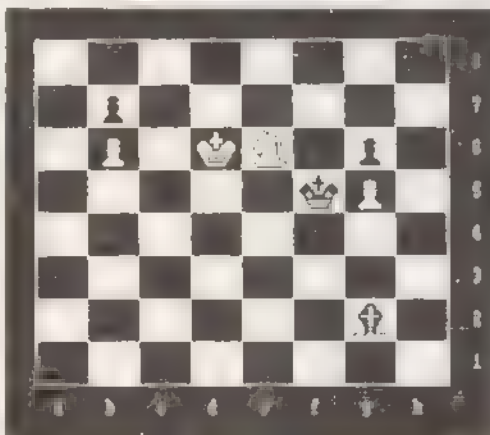
During 1985 Richard improved the program and translated it into 8086 Assembly Language. Versions of **Psion Chess** were then published for the **Apple Macintosh** and the **IBM PC** and its clones. The graphics for the programs were designed and programmed by **Psion**, leaving Richard free to concentrate on the chess playing algorithms to greater effect.

Also in 1985 – a busy year – he was approached by Hegener and Glaser of Germany (manufacturers of the **Mephisto** dedicated chess computers) who

wanted a new program for their top machine. Richard worked with German chess expert Ossie Weiner and a team of hardware engineers to produce the **Mephisto Amsterdam**.

This program slaughtered the opposition in the 1985 World Microcomputer Chess Championships held, appropriately enough, in Amsterdam. The team of three **Mephisto Amsterdam** machines scored 22 out of a possible 24 points, with 21 wins, two draws and only one lost game. They walked away with first, second and third places and, of course, the team prize.

The **Mephisto Amsterdam** is now re-



garded as the Rolls-Royce of dedicated chess computers. Its rating has been independently assessed by several sources as between 2000 and 2250 ELO. With 64K Rom, 16K Ram, it uses a 12MHz 68000 processor, and if you've got about £900 to spare, then pop along to Harrods and buy one (yes, I know it's a lot of money, but then Rolls-Royces don't come cheap).

Since the 1985 tournament, Richard has continued to improve his program and has helped to produce a version for the **Atari ST** computer. For development Richard uses a **TDI Pinnacle** computer which has a 12MHz 68000, a half Megabyte Ram, and a 10Mb hard disc.

There has always been disagreement between chess programmers about whether "brute-force-full-width" or "selective search" is the best approach.

Richard has no doubts. He has always believed firmly in the selective approach. He also believes – reasonably enough – that it is important for chess programs to contain a large amount of chess knowledge.

And what of the future for programs such as **Psion Chess**, and dedicated chess machines?

Richard feels that chess programs will continue to improve as hardware gets faster and software gets better. Messrs Karpov and Kasparov can relax on their laurels for a little while though. According to Richard they will be under no threat from a computer program this century.

Sighs of relief from Moscow.

One of the biggest recent improvements in chess programs has been in their endgame play. As an illustration, at a chess tournament in Helsinki the FIDE Master Harn Hurme made a speech about chess computers and stated that the machines were still "stupid", above all in endgame strategy. However, Hurme then played a demonstration match against the **Mephisto Amsterdam** and, unfortunately for him, lost after getting into a complicated Bishop-Knight endgame!

The final moves of the game are shown below (**Mephisto** playing white).

78 Ne6-c5	Kf5xg5
79 Kd6-c7	Kg5-f4
80 Nc5xb7	g6-g5
81 Nb7-d8	g5-g4
82 Nd8-c6	Bg2xc6
83 Kc7xc6	g4-g3
84 b6-b7	g3-g2
85 b7-b8/Q+	Kf4-f3
86 Qb8-b6	Kg3-f3
87 Qb6-g1	Resigns

And, as a final thought, on last year's BBC2 chess series, British Grand Master Raymond Keene stated that in his opinion he could take on a hundred chess computers simultaneously and beat them all.

However, I wonder if he realised that during one of his simultaneous displays last year he played Richard Lang, and he lost! And Richard freely admits that he can't play nearly as well as his program!



Spot the pigeon

*Tony Bridge dives headlong into **Monsters of Murdac**, the latest adventure from Global Software. He discovers elves, trolls, underground caverns . . . and a pigeon*

From Global Software comes *Monsters of Murdac* for the Amstrad CPC and PCW machines; it sounds like one of those awful backward constructions like *Murteps* from Mikro-Gen's ancient *Sorcerer's Castle*. In fact, it just comes out as cadrum – deep, huh?

This is a text adventure from John Thackeray and Jon Partington, implemented by Locomotive Software, so you

ing the answer from a sheet, with the attendant temptation to read on and see more of the answer.

Monsters is the first in what looks to be a very promising series to come from Global which includes *Philosopher's Quest* and *Countdown to Doom* – as you'll know, these excellent games are very well-respected adventures from the early days of the Beeb, and it will be good to see them on the Amstrad.

Monsters of Murdac is an adventure with its shirt-sleeves rolled up! It's a traditional story of elves, trolls, gold, underground caverns and so on, but conducted with a certain amount of humour. As Global itself says, *Murdac* contains "death-defying trolls, bloodthirsty, bricklayers and even not-so-friendly fairy god-mothers". But enough of the story, which is really just a coat-hanger for the problems.

One of my favourite devices, the slow start, is employed to lull the player into a false sense of security. The start of this traditional plot is set in a tranquil garden – there is a round dozen of easily explored locations in this opening scene, and in true adventure-story fashion, there are several objects to be discovered here, some of which have obvious uses, while others are more mysterious.

The ubiquitous sword is there for the taking, although a little ingenuity and a deal of lateral thinking must be used to make it appear (remember your Arthurian legends). As a free hint, immediately go south, north, S and N again from the start (this particular routine won't work if you hesitate for a second), then pick up what you find – well, blow me down!

Something else that will make the adventurer's heart quicken is the hut, looking so inviting to anyone who has

played the classic games, and it is the focal point of this part of the story – there's a silly pigeon wandering around in the hut, who doesn't seem to serve any purpose.

But I have hardly scratched the surface of this game, and I hesitate to say for certain that the pigeon is useless (he can be befriended, however, and it seems prudent to do so). Every time I attempt the game I find something new, and I have a terrible feeling that I still haven't explored every part of that oh-so-innocent garden.

And is there a second chance? Can you get back from some later stage of the adventure to the start in order to pick up those things which you might eventually need?

Once beneath ground, the adventure opens up, with a cellar beneath the hut containing exits at all points of the compass, all of which lead to many more locations – again, plenty of objects to be examined and lots of neat little problems.

This part of the story is very more-ish; you'll find yourself just whizzing round and round the locations until finally coming to a halt – now a bit of deep thought must be employed!

Although the descriptions are just three or four lines long and not in themselves particularly atmospheric, nevertheless you'll find yourself drawn in to a believable fantasy. This is helped by the way in which the program recognises that you have previously passed through a location, with *You are in the garden*, where you picked up the rod being a typical response.

No bugs yet

In fact, the whole story is very well presented, which is not surprising considering its pedigree via Locomotive – needless to say, I haven't yet found a bug. Meanwhile, I have to admire the screen layout and parser, which accepts multiple commands: *Examine* is not, however, recognised, though this is so, apparently, because "the game is conceived in such a way that the puzzles are not involved in merely happening to discover things about the objects."

"It is only by manipulating them where



know that it is going to be a goody – and so it proves to be.

There are several unusual features in this game, the first of which must be the amount of disc access that goes on throughout the story; a universal feature of American adventures, but one that has been slow to catch on here. With the steady growth in the UK of disc drives as seen in the Amstrad range, maybe games like this will become more common in the future.

Then there is a dynamic hint feature, again for disc users (tape users will have to write off Global for a help sheet, I'm afraid), within the game, just type *Help* – each disc contains a database of hints which can be examined, from subtle nudges through to complete solutions for particular problems. Thus the player can elect how much of the final solution to see, which seems preferable to read-

possible, or conjoining them that relevant features are revealed." Does this mean that the adventurer must wander around totally blind until some flash of inspiration lifts the veil?

The game play is in general conducted very professionally; we've discussed the *Help* feature, and this is well presented, with the current display scrolling smoothly away off the top of the screen to make way for the hint text.

Automatically worn

Input can be of the usual verb-noun construction, or by using multiple commands, and it is good to be able to *Drop all except the red cherry* (although it is perfectly possible to *Swipe gin bottle then go north very carefully and then kill the ogre with the bottle*, I can't see anybody actually typing in such drivel).

With the exception, as we've seen, of the *Examine* command, most of the adventure conventions are adhered to. However, *Wear* is similarly not recognised – if an object required wearing to fulfil its function, then it is automatically worn.

I'm glad to say that *Save* and *Restore* are very easily and quickly managed, at least for disc owners, although *Monsters of Murdac* suffers from the same drawback as Infocom and others in not offering a *Cat* facility to players.

You will need to make sure that you

know precisely what is on your disc!

I also liked the way in which the necessary lamp, found at some early stage in the story, switched itself on and off as necessary, thus relieving the player of word-matching as in most other adventures. After all, surely even the thickest dunderhead could switch on a lantern, and it is one less worry.

I didn't, though, like the way in which an ignominious death can all too easily be met. For example, stumbling into the keep will bring you face-to-face with a venerable old king, surrounded by his guards.

He will allow you to retreat without harm, but only if you drop all your possessions (he's very kind, though, in allowing you to retain your lamp, without which you would fall and break your neck

in the dark. An unpleasant death).

Try moving away with inventory intact and you will die an ignominious death at the hands of his guards. There are several other ways in which an abrupt conclusion may be met, so regular use of that *Save* facility is recommended.

Murdac, as I've said is an adventure with its shirt-sleeves rolled back, a nonsense story – but the shirt is made of the purest silk and fits the adventurer perfectly.

The tape for your CPC machine will set you back a very reasonable £7.95, with the disc available at £14.95; the adventure can also be run on the PCW for £19.95 and conversions are doubtless on the way. Global Software is at PO Box 67, London SW11 1BS.

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Apple II series – the story continues

Peter Worlock previews Apple's IIGS machine – to be priced at Atari ST level, but with some Amiga-like capabilities

The story of the Apple II is a long and fascinating one – apart from being, arguably, the first personal computer, it is certainly the longest lived.

Difficult to believe, but we have it on the authority of the Wall Street Journal that this venerable machine is still the world's second-best selling machine, after the IBM PC.

So when Apple launches the latest generation of IIs, known as the IIGS, it's not something to be taken lightly.

The original II line used the 6502 processor, the same as the Commodore 64, early Ataris, and the Acom BBC Micro, among others.

The GS breaks new ground by using the 65C816 processor, the first commercial microcomputer to do so. What makes the new chip interesting is that it is completely compatible with the 6502, while at the same time being a full 16-bit processor capable of addressing 16 megabytes of memory.

This means that the new machine will run virtually all of the existing Apple II software, but holds out the promise of much more powerful programs to run in its own right.

The machine itself, as we've come to expect from Apple, looks very attractive. It comes as a three box unit: monitor, processing unit, and detachable keyboard, with the disc drive making a fourth. The white colour scheme and styling are familiar from the Apple IIc.

What you get in the basic system is a monochrome monitor, 256K Ram, a single 3½ inch, 800K disc drive, and mouse. As extras you can add another 3½ inch

disc drive, two 5¼ inch disc drives, a colour monitor, and Apple has plans for 1Mb and 4Mb memory expansion boards.

But what makes the machine so striking are the items which give it the name GS: the graphics and sound.

The GS supports the old Apple II graphics modes, but adds new ones called "super hi-res". The first is 320 x 200 with 16 colours, and the second is 640 x 200 with four colours. Each colour palette can be selected from a total of 4096 colours.

If this sounds impressive enough, you ain't heard nothing yet. The clincher is that the GS can support 16 palettes on each screen, and the palette and resolution mode can be changed on each screen line. This means that the GS can give the Atari ST and the Commodore Amiga a run for their money in the graphics department.

In terms of sound, it leaves them standing.

The GS's sound chip is the Ensoniq Digital Oscillator Chip which supports 32 oscillators used in pairs. One oscillator is used as a timing signal, which leaves 15 oscillator pairs for sound output.

This means 15 independent "voices", compared to the four used in, for example, the Commodore 64 or the Atari ST.

Moreover, the DOC operates on its own – it doesn't need to be programmed on interrupts – and it has its own memory to store waveforms. This makes the GS a clear leader in microcomputer sound – notably better than even the awesome Commodore Amiga.

Other notable aspects of the GS include a Macintosh-like operating system that employs the mouse with a "software desktop" incorporating icons, drop-down menus, and desktop accessories such as calculators and the like.

The disc operating system is a development of Apple's ProDOS as used in the II series, which allows you to read Apple II discs, and holds out the imminent prospect of file-compatibility with the Mac.

Conclusions

The GS is an intriguing machine, to say the least. The graphics are great, the sound is truly "state of the art", and the pricing pitches it directly against the Amiga and the top end of the ST range.

It has an instant, large software library in the Apple II range but obviously these packages will make no use of the advanced features of the machine.

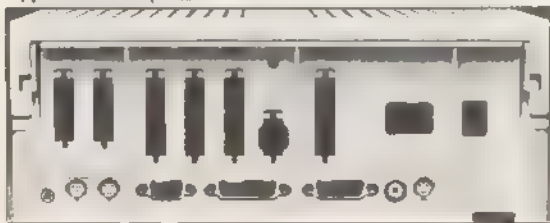
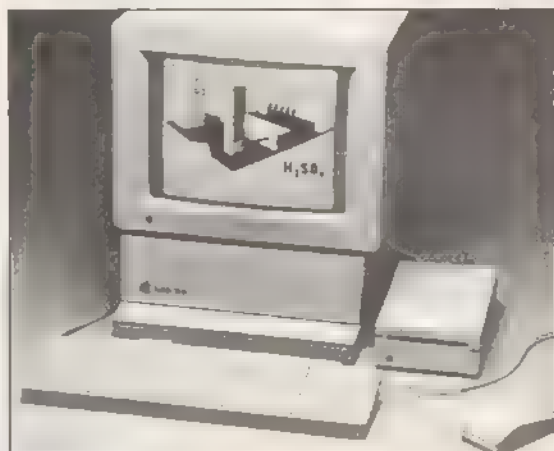
Dedicated software will take a while to arrive, and how much of it there will be is open to question since software developers will be reluctant to devote their energies to such a small user base, compared to the very large existing market for old-style Apple II products.

In short, it's difficult to judge the prospects for the machine in the UK. In the US, I've no doubt, it will do extremely well, but the British division of Apple is almost somnolent compared to its US counterpart. (For example, one wonders why Apple didn't stop Acorn dead in its tracks when the educational market was up for grabs – it was well placed to do so.)

The machine will be available from January 1987 at £995, inc Vat, for the basic system.

Finally, the company's insistence on high prices – while making economic good sense – means that the GS will never be a mass-market machine. You could do worse than buy one – but be prepared for a little loneliness. The odds against you stumbling across a fellow GS owner in the pub are enormous.

Product Apple IIGS **Price** £995
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K-Word – up to the challenge?

The Atari ST is in many ways the ideal word processing machine, offering fast disc access, large file memory, mouse control and the convenience of windows and pull-down menus. It needs a good word processing package to take advantage of all these facilities, and Kuma's *K-Word* seems to be up to the challenge.

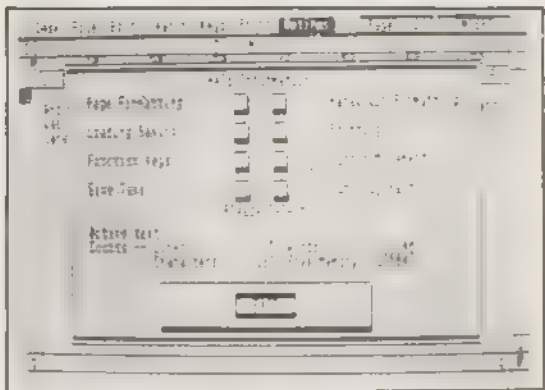
K-Word is considerably more advanced than *First Word*, the wp package included with the ST. However, since it takes full advantage of the Gem environment, it shouldn't represent much of a shock for anyone who wishes to upgrade.

Compatible with other Kuma packages such as the

spreadsheet, *K-Spread*, *K-Word* can also send and receive Ascii files, so you can transfer existing *First Word* files if you so desire.

All the normal text editing features are included; you can use either the mouse, or combinations of arrow keys, to move to the end of a line, to the beginning of a line, to the next page, back one character, forward one character, and so on.

It's also possible to have four windows, with different texts, open at the same time, although only one will be active. There's a "clipboard" facility which enables you to transfer text from one window to another. The text formatting window allows you to opt for left-, right-justified



or centred text, while italic, bold and underlined text can also be toggled on and off.

Margins, headers, footers, place string, definable function keys, mailmerge, auto key repeat and flexible printer tabs, indents, search and re-installation routines are all included.

Mercifully, there's also a word-count, which is one of the notable omissions from

First Word.

With a good, clear manual and a reasonable price, *K-Word* looks like an excellent choice for the demanding word processor user.

Chris Jenkins

Program *K-Word Micro*
Atari ST Price £49.95
Supplier Kuma, 12
Horseshoe Park, Pang-
bourne, Berks RG6 7JW

PC 'thought processor'

For everyone who is on the verge of buying a shiny new Amstrad PC and wondering what programs to run on it, take my advice – get *PC Outline* first!

No matter what your main line of business is and no matter what type of program you are likely to be running 90% of the time, word processor database spreadsheet, accounts, even games, *Outline* will greatly extend the power and usefulness of your system.

Outline is strictly speaking an example of that boon to the jargon manufacturers, a 'thought processor'. It is like a word processor which, although lacking advanced features such as spelling checks, or headers and footers, has the added ability to structure your text into a hierarchy of ideas.

A document could contain several main headings, A, B, C, etc. each one of these headings can be subdivided into smaller sections, A.1, A.2, A.3, or even smaller

A.3, 1.A.3.2, and so on. In a report, for example, the main headings may contain general summaries, each smaller section giving more precise details on certain topics.

A 'thought processor' allows you to create such docu-

programming I've ever seen on a PC.

For a start it is a memory resident 'pop up' program. It can sit there, invisible, until a certain key combination is pressed and suddenly there it is, ready to make notes, act

"it really does help to structure your ideas"

ments and then manipulate the structure rapidly and easily – sections of detail can be moved and repositioned, promoted up a level or demoted.

Levels of detail can be hidden so only the major headings show or revealed again at the press of a button.

Once you get used to it it really does help to structure your ideas in a more logical manner and could do as much to improve your output as word processing did for textual errors.

But the true beauty of *Outline* goes further than that – it's easily the best piece of

as a diary, whatever you want. When finished back you go to whatever program you were running before as if nothing had happened.

Outline documents can be converted to *Newword/Wordstar* or Ascii files with ease, or they can be 'fed' to your current program (whatever it is) as if you had typed them at the keyboard guaranteeing compatibility with, and complementing, almost any word processor.

Outline commands are entered by pop up menus or by short cut commands when you are more proficient. Most

fun of all is that the document can be displayed in a window which can be changed to any size and moved to anywhere on a screen so that you can view your other program underneath. No less than nine definable windows can be on screen at once, each containing a different *Outline* document and you, or your text, can jump between each one with a couple of keypresses (all done without the need for Gem).

There are so many remarkable details to *Outline* that I don't know where to stop. Everything happens instantaneously, windows appear and vanish, paragraphs re-format as you type, but so quickly you hardly notice, and so on. Try to see it. Even better, buy it.

Tony Kandle

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COMMODORE 64/128

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Enhancer 2000 or the 1541C; disc drives slug it out

Back from the computer wasteland, once again in profit and looking forward to slugging it out with Atari and Amstrad/Sinclair, Commodore looks confident for the first time since the departure of Jack Tramiel.

The new-style 64C should be in the shops now, part of the Connoisseur's Compendium which is reviewed in this supplement. We're also looking at the spectacular Artist 64 mouse-driven graphics package and its rivals; the amazing Pawn adventure, at last translated to the 64; the latest choice in disc drives; the impressive Print Shop text/graphics producer, and much more.

We've saved our games coverage until nearer Christmas; meanwhile read about all the ways you can make your 64 work for you. ◀

The case for cartridges

BASIL COLFAX LOOKS AT THE WIDE CHOICE OF PLUG-IN UTILITY PACKS TO ENHANCE YOUR 64

For all its facilities, the Commodore 64 suffers from lots of omissions; there are no Basic graphics commands, limited printer control, complex disc commands, no built-in machine code monitor, and so on. Although some of these drawbacks can be remedied by software, what's really needed is an extra add-on operating system, preferably in the form of an easy-to-use cartridge.

With dozens of these plug-in units available, ranging from fast disc systems to basic extensions, it's worthwhile comparing some to help you decide which is the one for you.

► POWER CARTRIDGE KCS/MAGNAM PRODUCTS £39.96

The Power Cartridge, supplied in an eye-straining tomato red, is one of the latest cartridge products, and offers a wide range of facilities, though nothing unique. There are five main areas of use. The first is a Basic toolkit, offering automatic line numbering commands, colour setting for

border, background and text, block line delete, variable dump, text string find, function key commands, Basic merge, and so on.

Fast disc loading, claiming improvements of five to eight times, is another useful feature; you can also display a disc directory without disturbing the program in memory, change device numbers, and perform format/scratch/initialise functions without the tedious Commodore syntax.

Powermon is a straightforward monitor which allows access to RAM normally hidden under the kernel ROM, and includes a full set of commands to assemble, disassemble, fill, hunt, jump, display registers and so on. The printer command section allows you to make screen dumps, in large, small, normal or inverse print, and to use centronics printers connected to the user port.

The last feature is the reset page. Pressing the Power Cartridge's reset button brings up a menu from which you can select CONTINUE, to return to the

program, Basic to return to Basic with all variables retained, Reset to clear the memory, Hardcopy to provide printouts and Monitor to access machine code. The Power Cartridge is a good general-purpose device for Basic programmers and hackers.

► TURBO 50 ROBTEX £39.95

The first widely successful multi-purpose cartridge, the Turbo range, including the top-of-the-line Turbo 50, still stands up well to the opposition. Supplied complete with a head-cleaning tape, Turbo 50 is (so far as I have been able to make out) software transparent; it should not interfere with any commercial program



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you choose to load. It includes a rest reset button and using the SHOW command gives a full on-screen list of all the Turbo commands.

The Basic programming toolkit contains the usual auto-numbering, block delete, string find, and so on. A useful extra is HELP, which displays any errors in Basic commands just executed; a feature of the Commodore Basic 7.0 found on the C128. OLD retrieves a NEWed program; PLIST shows a listing page by page, and there are also commands to set colours and so on.

Function key presets for disc loading, listing and so on are provided; and Turbo 50 has comprehensive tape and disc speed enhancement routines, merge, and a good selection of disc commands.

Programs on tape or disc can be backed up, but protected software is often found to be uncopyable. There's a full-spec monitor, and Centronics printer facilities, including a routine to replace CBM graphics commands with easy to understand abbreviations.

Starting from \$24.95, the Turbo range would appeal to the same sort of audience as the Power Cartridge - Basic programmers and hackers - and represents very good value for money.

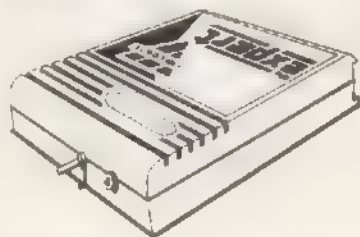
►THE EXPERT CARTRIDGE TRILOGIC

\$31.95

Unique in that the software operating system is loaded from disc, The Expert Cartridge is correspondingly cheaper than many of its competitors, and offers easy upgrading as new facilities become available. Instead of throwing away your cartridge and buying one with the latest ROM, you just send your operating system back to Trilogic with a small service charge, and they send you an updated disc.

Although this system makes The Expert Cartridge a little slower to use than the competition, once it's running it works very reliably.

The cartridge includes a three-position switch, OFF/PRG/ON, and the ubiquitous reset button.



The main functions of The Expert Cartridge are for preparing fast-loading backup programs, and providing monitor facilities. The operating system disc contains a fast load boot file, which is copied onto your library disc. The main program is then loaded into the cartridge, then the computer is reset.

Programs are frozen using the restore key, and can then be backed up to your library disc. The restart address is displayed on the screen.

One advantage of The Expert Cartridge is that, unlike other products, it compacts the backed-up program when transferring it to disc, saving valuable space.

Backups to tape can be performed without even having the cartridge in place (just using the master software), and the machine code monitor, which has a full range of assemble, disassemble, fill, jump, relocate and other commands, allows you to modify existing programs to your requirements (so long as you understand machine code!)

As its name suggests, a product for the more able computer user, and one which offers both value for money and longevity.

►FREEZE FRAME 2

EVESHAM MICROS

\$39.95

A straightforward program backup utility cartridge, offering amazing ease of use

and high efficiency, Freeze Frame has recently been updated.

Operation is simplicity itself. On powering up, Freeze Frame displays a screen of instructions. Pressing the space bar clears the screen and resets the computer, at which stage you can load your program from tape or disc.

Freeze Frame operates by the principle of taking a "snap shot" of whatever is in the computer's memory when the cartridge's reset button is pressed. Therefore, when you load the backup program it starts at the exact stage where it was saved.

Backups can be made to tape, or to disc at either normal speed or fast-load, simply by pressing the correct key after resetting. Freeze Frame is, admittedly, wasteful of disc space; it saves each program as five separate files, making it unlikely that you will get more than three backups onto each disc.

There are a number of alternative routines available to deal with certain troublesome programs, but basically Freeze Frame 2 is incredibly easy to use and very reliable. As a bonus, the backed-up programs load three to four times faster than normal, displaying the distinctive Freeze Frame black and white flashing screen as they load.

An excellent purchase for any computer user who wishes to produce security backups of any heavily-used software package.

►ONE-STEP FIRSTLINE SOFTWARE

\$14.95

30 useful functions on one cheap cartridge can't be bad. Produced by ShareData in the US, the One-Step cartridge has a bit of everything, including a reset button which brings up a display of all the available commands. Most of these involve two keystrokes - * followed by one other - which replace more cumbersome CBM Basic commands.

Facilities include automatic line numbering, file copy, whole disc copy, delete block, show free memory, get directory, print screen (text only), send DOS command, set screen colours, load basic program, load sequential file, change drive device number, and so on. There's also a simple text editor which can function like a word processor for short documents, setting margins, saving and loading files, and scrolling through a work area up to 481 lines long.

One Step has a lot to offer, not least economy, and may well provide all the facilities you need. Consider it carefully before splashing out on something more elaborate which may include facilities you will never use. ◀

►THE FINAL CARTRIDGE

11&P COMPUTERS

\$45.00

The Final Cartridge has always claimed to be more than just an add-on, more a whole new operating system. Certainly, it contains facilities which are difficult to find elsewhere, and is often updated using ideas, to put it politely, "inspired by" other products.

Claiming to be compatible with 98% of commercial software, The Final Cartridge includes a reset button and an on/off switch. Facilities fall into eight or nine categories, including disc turbo offering 6-8 times faster loading and saving; tape turbo, up to ten times faster; centronics printer software; screen dump facilities for hi-res and multicolour screens; 24K RAM extra made available for programming; a Basic toolkit with auto number, find, help, old; preprogrammed function keys, typewriter commands to use your printer directly; a machine-code monitor; and, in the latest versions, a sprite collision detection disable function to make gameplay easier. There's also a version available with a freeze facility, which enables programs to be backed up to disc or tape.

An excellent product for the more advanced computer user, and one which offers an update option as new improved versions appear.

Commodore's mixed bag

IS THE COMMODORE CONNOISSEUR'S COMPENDIUM
A LUCKY BAG OR A PIG IN A POKE?
ANDREW MAYFAIR STICKS HIS HAND IN

Since the dismal failure of the underpowered C16 and Plus/4, and the relative disappointment of the C128 (overpriced, and with no CP/M software emerging), Commodore has been wondering how to restore its shattered market image. The Amiga, wonderful machine though it is, is obviously not going to become the sort of ground-breaker the Apple Macintosh was.

Is Commodore's salvation, then, going to be a return to the stalwart 64? It certainly looks that way, since the latest version, the 64C, is being heavily promoted with the Connoisseur's Compendium pack, the ideal Christmas purchase at \$249.

Just what do you get for your money? For a start, the basic 64C. This is internally identical to the 64, and will run all the same software and use the same peripherals. The only differences are cosmetic; the 64C is housed in a low, wedge-shaped case which makes it look like the C128, with the extra control keys and numeric keypad removed. The four function keys are found, as with the original 64, to the right of the main keyboard. The keyboard action is slightly easier, but functionally the machine is identical to the old 64.

Also included in the Connoisseur's Compendium is the standard Datasette cassette deck. Though this is the second version of the datasette (how many of us remember the original, box-shaped model?), it now looks outdated compared with the 64C, retaining the rounded corners and chunky keys.

Innovative

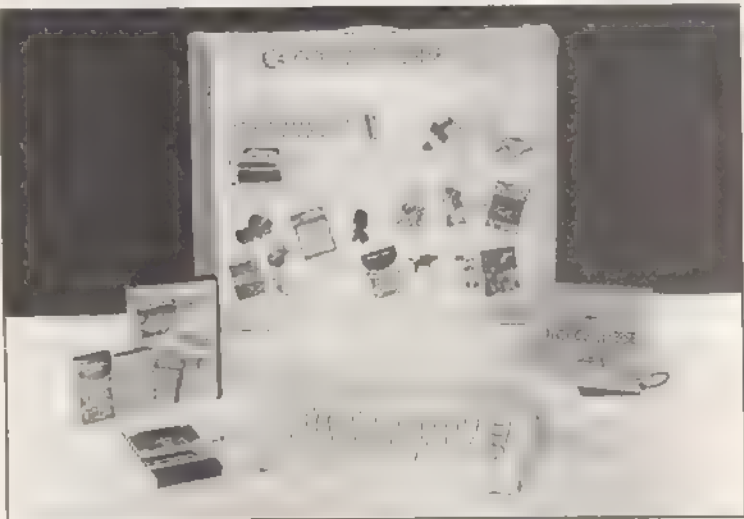
More innovative is the mouse and graphics package included in the compendium.

These items will be familiar to many of you as the Wigmore House MS-2000 mouse and Cheese graphics package (also sold as the NEOS mouse), normally around \$50. The mouse is excellent; plugging into the joystick port, it includes a long cable, two positive-action click-switches, and a smooth-rolling rubber-coated ball. Resolution of up to one thousandth of an inch is possible using the advanced optical circuitry, and the mouse can also be used as a joystick if the left-hand button is held down when the computer is powered up.

The Cheese graphics package is equally impressive. It has three menus of icons to select drawing facilities such as line, freehand, fill, circle, square, mirror, block copy and pattern. All sixteen CBM 64 colours can be used to create detailed pictures which can then be printed out on

A good sprinkling of arcade games plus some strategy titles and perhaps an adventure would have done much more to indicate the versatility of what is, after all, still the world's best-selling home computer.

Last on the software list is the Pitman



any Commodore printer. The software is supplied on cassette (and pictures can only be saved to cassette), but a disc upgrade is available from the manufacturers. The mouse and Cheese make an excellent addition to the 64, and the Wigmore House Artist 64 software reviewed elsewhere in this supplement makes the obvious upgrade.

Unfortunately, despite many promises, neither Commodore nor any other third party manufacturer has come up with any more mouse-driven software. Pity.

What else is included in the Connoisseur's Compendium? Candidly - not much. Rather than include a wide range of software products, Commodore has opted for a whole bundle of bored game - sorry, board game - conversions from Leisure Genius, and others. These include versions of the world-famous Monopoly, Cluedo and Scrabble; and Audiogenic's Grand Master Chess and Renaissance (also known as Othello). Whatever the individual merits of these programs, together they represent very little extra incentive to buy the package.

Typing keyboard skills program, across which I shall draw a discreet veil. Admirable though it is to give computer users some incentive to learn to type, what's the point in offering this package in a bundle which is totally unsuited to word-processing due to the absence of a printer, disc drive or word processing software? A very odd idea.

Overall, then, the Connoisseur's Collection is hardly that. The 64C, mouse and graphics software are excellent; the rest is padding. So is the compendium the ideal starter's pack for the computer neophyte? I would still recommend the Commodore 64C, even over the Sinclair/Amstrad Plus 2, which although it is \$100 cheaper than this package offers inferior graphics, inferior sound, no standard disc drive, and less sophisticated software. The Compendium, though, is another matter; why not weigh the cost of the mouse and Cheese, plus a 64C, and decide for yourself whether the Compendium's other delights are what you want your Christmas present money to be spent on. ◀

64C

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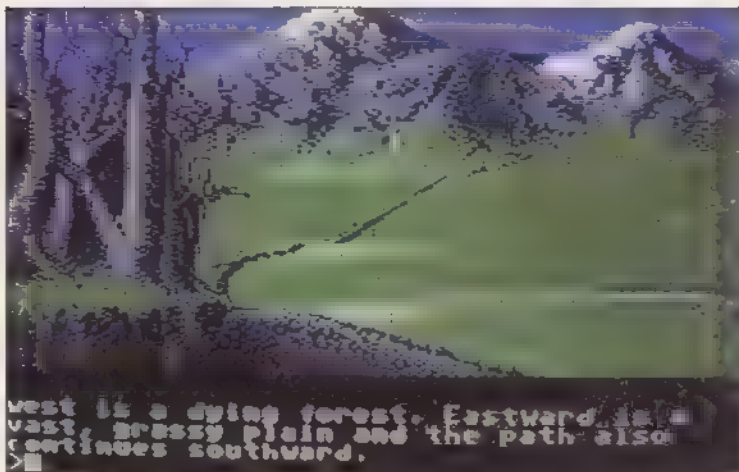
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I normally hate adventures, for several very good reasons. For a start, the scenarios are clichéd; the goblin's dungeon, the maze, the sinister castle. Secondly, the parser (text interpretation system) is limited; often to verb-noun entry, and often to responses like "I don't understand" or "You can't go that way" which make you tear your hair with frustration. Thirdly, the illustrations are usually four lines and a blob; and lastly, they have no sense of humour. The net effect is not of locking minds with a devious intellect, but of trying to communicate with a Latvian idiot in order to solve meaningless puzzles.

Enter **The Pawn**. Originally intended for 68000-based machines, the QL, ST and Amiga, **The Pawn** is now available for the 64/128, and does for adventures what the



No yawns with the 64 Pawn

Huns did for the Roman Empire; it gives them a boot up the bum.

The **Pawn**, developed by Magnetic Scrolls and marketed by Rainbird, is a satirical adventure with all the complexity of the most fiendish titles from better-known software houses like Infocom and Level Nine, but with the addition of an incredible parser, excellent illustrations and a wonderful sense of humour. The result is an adventure for non-adventurers, and a classic for hardened ore-bashers.

The **Pawn** comes on two discs, complete with a novella, *A Tale of Kerovnia*, which acts as a scene-setter for the game. Kerovnia is a land inhabited by characters you may recognise from other games - the brave adventurer, the beautiful princess,

RICHARD BENSON ON THE GROUND-BREAKING RAINBIRD ADVENTURE PROGRAM, NOW CONVERTED FOR THE CBM 64/128

the game is to obtain help in removing the wristband; but along the way you will inevitably become involved in the plots and counter-plots of the main characters.

Apart from the jokes, which vary from the subtle *Irrelevant Maze* and *Unimplemented Rem Statement* to the broad humour of *Gringo Baconburger* and the whining Princess, **The Pawn** features very complex object handling due to a sophisticated data look-up table, which can assign dozens of qualities to each object and character.

Unlike the ST/Amiga versions, the 64 version of **The Pawn** doesn't have pull-down windows for selecting various display options. Above the 40-column green text is displayed a brief description of your location - "On the path" for instance - together with your current score. Dotted throughout the adventure are illustrations which faithfully recapture the charm of the ST/Amiga pictures, though obviously limited by the hardware of the 64. Still, the only 16 colours and limited resolution artist Bob Stephenson has managed to produce the best pictures I've seen in an adventure game; and make the effect more stunning, the pictures scroll down over the text, and can be scrolled off again if you so wish, using the function keys.

Another excellent concept is the cameo, a miniature of the current scene illustration which appears at the top right hand side of the screen.

The most impressive aspect of The

Pawn is undoubtedly the parser. Although the vocabulary is not unusually big (still bigger than practically any other adventure on the market, though), the

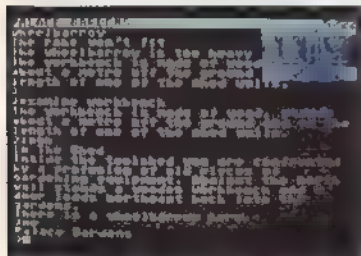
way in which sentences can be interpreted is unique. For instance, up to the limit of 255 characters, sentences of any length can be entered; so you can string together dozens of movement instructions in one command. The parser can also tell from sentence position whether a word is being used as a verb, noun or adjective; for instance "plant the plant in the plant pot".

The parser copes easily with indefinite articles - "take it", "talk to him" - and also recognizes which objects you are referring to without their full description being given - for instance "the key in my pocket" rather than "the wooden key".

Moreover, it's very easy to edit your text as you enter it: using the cursors and other command keys you can delete characters, words or lines, or recall a previous line.

The forthcoming CBM 128 version will have two modes; a 40-column version similar in appearance to the 64 game, but operating faster because more is held in memory; and a text-only 80-column version which will operate even faster with the Z80 chip and fast processor.

Unless your attitude to adventures is so po-faced that you dislike the humour of **The Pawn**, you are bound to be stunned by its wit, invention and technical achievements. At £19.95 it's not an impulse purchase, but is certainly an investment which will give you many hours of adventuring pleasure. ◀



the wicked enchantress - but all with a subtle twist.

Kerovnia also suffers from a political crisis, as *Gringo Baconburger*, leader of the Opposition Party, tries to oust the ineffectual King Erik from power. Into this scenario you find yourself thrust, armed only with a pair of jeans and a shirt, with a mysterious silver wristband locked onto your arm. One of the aims of

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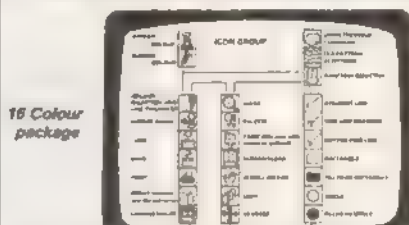
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The art of mouse

CHRIS JENKINS ARGUES THAT WIGMORE HOUSE'S ARTIST 64 OUTPERFORMS ANY OTHER COMMODORE GRAPHICS PACKAGE

Graphics packages for the 64 seem to fall into two categories; those with a few simple facilities which are relatively easy to use, and those with more complex controls which often end up baffling the user. Only with the emergence of WIMPS - window, icon, menu programs - has it really been possible to combine complexity with ease of use.

Another important factor in the emergence of the mouse. If you have ever tried using a joystick-driven art package, you will know that the eight-directional nature of joystick control makes it practically impossible to draw smooth curves. Only the free-moving control offered by a mouse - basically a kind of tracker ball turned upside down and used on a table top - can give convincing freehand effects.

The three packages we'll be looking at - Wigmore House's *Artist 64*, Rainbird's *OCP Art Studio* and *GeoPaint* (part of the First Analytical GEOS package) - all offer some very sophisticated facilities, but manage to be quite different.

Hi-res

Art Studio and *GeoPaint* have several factors in common. They both operate using a sophisticated system of pull-down menus and windows, and they both work in the 64's "high resolution" mode. This gives a horizontal resolution twice that of the "multicolour mode" used by *Artist 64*, but due to hardware limitations of the computer (no more than two colours in any 8x8 pixel block), hi-res mode can lead to terrible problems with colour priorities. The result can be that Sinclair Spectrum-type character square colour clashes ruin your otherwise wonderful picture.

Despite these problems, *Art Studio* excels in many ways. The top of the screen shows a selection of menus - print, file, attributes, miscellaneous, undo,



Sprites, colour cycling, sprite fills and colour priorities on Artist 64

windows, fill, magnify, text and shapes, plus a display of the section of the full screen currently in use and the control device. This can be the keyboard, Koalapat, joystick or mouse. The control device moves an arrow around the screen, allowing you to pull down the required menu, make a selection from it, then return to painting. Purchasers can obtain a suitable mouse for around £30 from Rainbird.

All the standard drawing features - lines, boxes, circles, textures and patterns, freehand and so on - are included, but the *Art Studio* also offers a wide range of zoom options (from two to eight times) and printouts.

Your completed pictures can be loaded into other programs with a few simple lines of Basic, making *Art Studio* suitable for illustrating, say, graphic adventures.

If *The Art Studio* gave the option of using multi-colour mode instead of just hi-res, it would be easier to use. As it is, the "front end" is excellent, and with some preplanning good effects can be achieved. An advanced version (which may offer multi-colour mode) is on the way next year.

Very similar in its Macintosh-style icon controls, is the *GeoPaint* section of GEOS. For those of you unfamiliar with GEOS, it's an operating system intended to drag the CBM 64 kicking and screaming into the ST/Amiga/Macintosh world of windows, icons and menus. *GeoPaint* includes

GeoWrite, a word processor, a "desktop" routine featuring icon-based disk handling, and, among many other features, the graphics package *GeoPaint*.

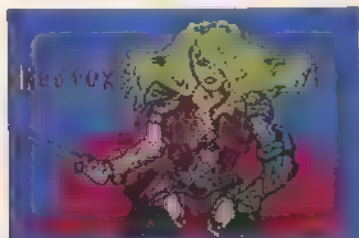


GeoPaint presents a menu bar on the left hand side of the screen, containing icons for all the standard functions; brushes, freehand, circles, fill, undo, grid, and text. *GeoPaint* can use any of the font shapes available from GEOS, which makes it ideal for producing, say, labelled diagrams.

Artist 64

Like *The Art Studio*, *GeoPaint* suffers from operating in hi-res mode, so expect problems with colour clashing. Otherwise it's quite powerful, despite the lack of mouse driving software which should be rectified soon.

The third package we'll look at is *Artist 64*, from Wigmore House. Best known in the Commodore market for the Wigmore Mouse and the Cheese graphic design package (both of which are included in



Artist 64 text, fill, patterns

the Commodore Connoisseur's Compendium), Wigmore House has come up with what may be the best graphics package possible on the 64.

Artist 64 doesn't have pull-down menus or icons, which in some ways is a step backwards from the excellent but limited Cheese package. However, Artist 64 offers facilities which astound everyone who sees them, and which squeeze Amiga-like graphic performance out of the humble 64.

Operating either with the Wigmore Mouse or a joystick, Artist 64 has five main screens; main menu, special effects menu, input/output menu, colour priority grid and drawing screen. Two disks are provided with the package; the first contains the main program, the second some extra utilities for disk users such as a disk catalogue routine, and some demo files and routines.

The main menu contains the list of the basic drawing features, which are highlighted when you click on them with the mouse button (or by pressing the joystick fire button). You can then move to the blank painting screen and begin.

Basic functions include line, freehand, circle, ellipse, fill, rectangle, triangle, and set colour for ink/paper/border. Also included on the main menu are options for gridlock, which limits the movement of the drawing cursor to a user-definable grid pattern, magnify, which allows a screen window to be blown up for detailed work, and options to enter the special effects and i/o menus.

The i/o menu includes a QWERTY keyboard, which you can click on to enter filenames or to write text for your painting; and a list of five types of file; picture, pattern, brush, sprite and utility, which can be loaded, saved and catalogued with their own identifying prefix.

So far Artist 64 appears to be a comprehensive but unremarkable package. The special effects (SPFX) menu, however, turns it into an incredible and unique program.

The SPFX menu revolves around some sophisticated concepts; colour priority, cycling, and block copying. Apart from being able to define your own fill patterns and brush shapes, which can create some incredible effects in itself, you can also cut out any shape you have drawn on the screen and use it as a "sprite" to draw with. The Smiley Face example shown here was drawn using the circle, fill and zoom options, then cut out using the Cut Out Sprite option, and used as a "potato print" stamped all over the screen. To make things even more impressive, you can then set a "colour cycle" option.

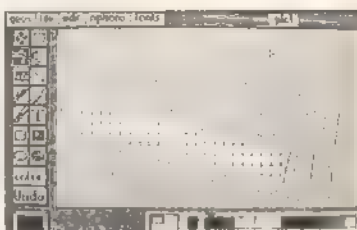
Previously seen only on ST's and Amigas, Colour Cycle allows you to select any of the sixteen available colours from a bar above the SPFX menu, and set a speed for the cycle. The colours in which you paint then change at the set rate as you create your picture. This facility can be used with any other routine - circles, freehand, polygons - to create instant patterns which would otherwise require hours of work.

Protect

Moving to the Set Protection page, you can then choose which colours appear above which others, by entering squares on a priority grid. When you paint now, high-priority colours will automatically overlay low-priority ones, making it possible to create incredible 3-D brush effects, and to easily place figures in the background without overpainting foreground objects.

There are lots of other features which enable you to produce graphic effects which would be impractically complicated, or simply impossible, using The Art Studio or GeoPaint. You can store a cursor position, and draw, say, concentric circles around this central point; you can enter text in any size from 5x5 to 160x200 pixels, or in an italic style; you can substitute any given colour for any other within a definable window; you can limit the drawing window to any size of your choice; you can select SOLID to produce

filled polygons rather than outlines; sprites can be flipped horizontally or vertically; two screens can be held in memory at once, so that you can either use the UNDO function, or deselect it and use the second screen as a "scratchpad"; "performances" can be



GeoPaint main menu

recorded and played back, with all control movements and option selection faithfully recorded onto disk, for the purpose of creating demos or memorising how pictures were built up; new shades of colour can be created using multi-colour sprites, and rainbow airbrush effects can be tailored according to your needs.

It goes without saying that your masterpieces can be stored to disk or tape, and printed out on MPS-801/803/1525/Epson printers.

Overall, Artist 64, though lacking the convenient pull-down menus of The Art Studio and GeoPaint, is without doubt the most impressive graphics package for the Commodore 64.

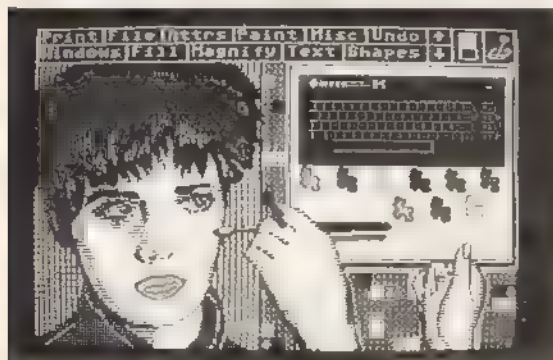
There are a few shortcomings; the lack of predefined brushes and fill patterns, the cumbersome jumping from one menu to another to access basic functions like UNDO; but, with the aid of the MS-2000/News mouse and a good deal of practice, you will soon be able to create graphics on the 64 which you thought were only to be found on the Amiga. Unless you need to use hi-res mode (for very precise technical diagrams perhaps), Artist 64 should give you everything you want, and avoids the shortcomings of The Art Studio and GeoPaint by operating in multi-colour mode.

Exciting

Having re-thought the whole concept of Commodore graphics creation, programmers Ian Bradbury and Rhys Davies are to be congratulated on coming up with the most exciting software package for the 64 since - well, since Cheese. Artist 64 is a compulsory purchase (and the obvious upgrade for anyone buying the Commodore Connoisseur's Compendium, which includes the mouse and Cheese), and cannot be praised too highly. ◀

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Colourspace-type designs which can be frozen and incorporated into your documents.

Once you have exhausted the possibilities of the graphics library, which could take some time, there are two options; either use the **Graphic Editor** (a straightforward sort of "sprite designer" which can be used with a joystick or Koaladap), to modify existing graphics or put together new ones; or go for the **Graphics Library** packages.

The two packages released so far each contain 120 extra graphics: the first, of holidays, special occasions, sports and so on; and the second covering jobs, people, places, hobbies and more. Both discs are double-sided to cope with both CBM and non-CBM printers.

To get the absolute maximum from The **Print Shop**, you'll want the **Print Shop Companion**. This package contains yet more typestyles, borders and background designs, plus a powerful new graphics editor with features more like a full graphic design package. There's also a **Tile Magic** feature which uses mirror effects to produce tessellated designs, a

font editor to create whole new typestyles or edit old ones, a border editor, a calendar maker, and a "creature maker" which allows you to combine sections to create bizarre monsters.

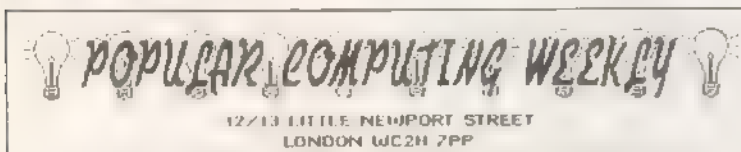
After lots of tantalising write-ups in American magazines, and limited availability through specialist importers, it's great to see the **Print Shop** series available at reasonable prices through Precision Software. Without doubt one of the most useful,

user-friendly and intelligently designed software utilities for the 64. The **Print Shop** should be high on your shopping list for Christmas if not before. ◀

Product: The **Print Shop**/Graphics Library/**Print Shop Companion**
Micro: CBM 64, 128

Price: £39.95/£24.95/£39.95

Supplier: Precision Software, 6 Park Terrace, Worcester Park, Surrey KT4 7JZ, 01-330 7166



To give you some idea of how easy the basic package is to use, the PCW letterhead shown here was produced within five minutes of loading the software for the first time.

The **Print Shop** isn't exactly a "pagenmaker" in the way that **Fleet Street Editor** is; it doesn't allow you to combine large quantities of different text sizes and many illustrations on a page. What it does is to give you quick and easy access to a library of preset text styles, patterns and graphics which can be combined in many different ways to produce polished "graphic documents".

The basic package is compatible with a huge range of Commodore and non-Commodore printers. It's best to start with a new ribbon, since The **Print Shop** is obviously very printer-intensive.

Booting the disc brings up the main menu, which invites you to indicate which printer and interface you are using. From then on it's all very non-technical and user-friendly.

Several different styles of document can be selected from the next menu: greetings cards, signs, letterheads, banners and so on. It's just a matter of using the cursor keys to highlight the type you want, and pressing RETURN to move

so on; and are drawn in an appealing cartoon style. You can choose one of three print sizes for your graphic.

The next task is to enter the message for the front of the card, choosing from eight sophisticated font styles which can be combined in a number of sizes and patterns. Coloured tractor-feed paper and

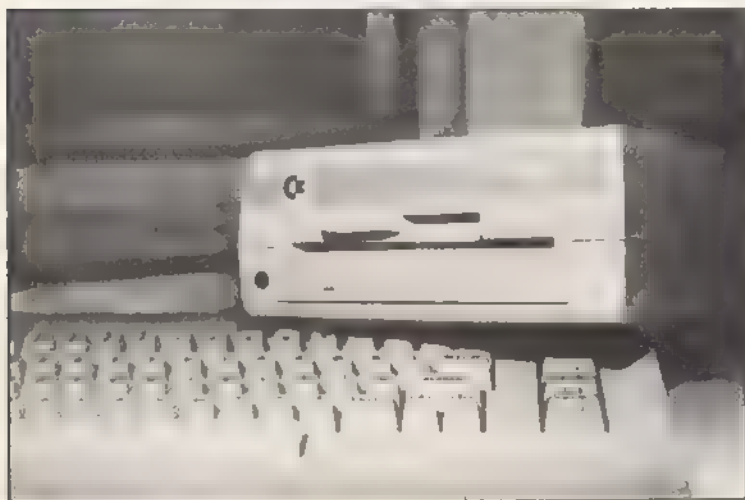


envelopes are included with the package. Having formatted the message using the size, position and solid/outline/3-D options, you can go to the printer menu, enter the number of copies, test the paper position, then, after a short pause while the computer is thinking, watch as your greetings card rolls off the printer!

Other options such as banner and letterhead offer different screen designs and text arrangements, while the **Print Magic** function produces psychedelic

Driven to discs

NOW YOU HAVE A CHOICE OF COMMODORE DISC DRIVES. JOHN RENWICK COMPARES THE "OFFICIAL" CBM 1541C AND THE "CHALLENGER", THE ENHANCER 2000



Buying a disc drive for your Commodore 64 has always been a harrowing experience. Because the unique Commodore serial interface is compatible only with CBM disc drives, the choice has always been limited, unless you want to invest in an IEEE interface and one of the heavy-duty disc units usually associated with the ancient PETs.

Flexible

For most users, the only choice has been the 1541, which is the size and weight of a breeze block and moves about as fast, or the 1570 which at least offers faster performance though no improvement in looks.

Now the choice has become more flexible; if you should buy a new 64C (identical internally to the 64 but with a more modern case), or if you wish to upgrade your existing 64 system to disc, you can either go for the latest from Commodore, or save money with the **Enhancer 2000**.

The new option from Commodore is the **1541C**. Functionally identical to the 1541, it's produced in the same new colour as the 64C, a light cream, and features an improved door system. Instead of the "pop door" found on the original 1541 and the 1570, the 1541C features a "spin door". This involves a door latch similar to that found on the C128D (and the 1571 double-sided disc drive), with the operation LED

set beneath it, and an indentation which leaves the edge of the disc exposed. This makes it much easier to load and unload the discs, especially should a loose label jam the drive, and looks much more modern.

The arrangement at the back, with two serial ports, power input, on/off switch and fuse, is identical to that of the 1541. Included with the disc drive is a 100-page manual and a test/demo disc, which includes printer test, disc address change, block allocation map view, disc check, header change, unscratch and other useful routines; possibly enough useful stuff to influence your choice of what to buy. The price? A cringe-making £249, unless you can find a bulk dealer offering discounts.

Enhancer

So what's the alternative? The **Enhancer 2000** is a Commodore-compatible device manufactured by an American company, and distributed over here by Firstline Software. It's smaller, neater and lighter than the 1541, and features a direct drive motor which should make it more reliable than the Commodore belt-drive system. Perhaps crucially, it's also only £148, and comes with what sounds like an excellent word processing program.

The **Enhancer 2000**, designed by Chinnon, has a separate power transformer

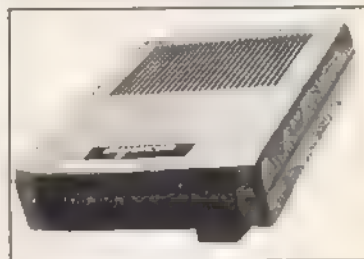
which eliminates most of the overheating problems experienced with the 1541. Like the 1541, the Enhancer features power and busy LEDs, two serial connectors, and a "pop door".

In a sense it's fully Commodore compatible, since you can use all the standard file, format, scratch, and other CBM DOS commands. The Enhancer, like the 1541, is an "intelligent" device, with its own 2K RAM and 8502 processor. Storage capacity is also the same as the 1541's, with 65535 records per file and 644 formatted blocks per disc.

Turbo

The Enhancer is about the same width as the 1541, but half the height and weight. Overall it's a nice little unit, and comes complete with the sophisticated Masterwriter icon-driven word processor from Sierra On-Line, all necessary leads, and a blank disc.

So what's the catch - there has to be one? Well, the Enhancer can't cope with the disc turbo loaders often used on UK games. It can manage US Epyx and many other programs, but in effect this means that it cannot be seriously considered by the ardent games player. The good news is that 99% of "serious software" - word processors, databases, spreadsheets, utility packages - don't use turbo loaders,



and will therefore work perfectly with the Enhancer. Of course, it's also ideal if all you want to do is write and store your own Basic or machine-code programs. Enhancer even claims to be faster than the Commodore 1541. So which is your choice? Complete compatibility with the expensive, bulky 1541, or economy and increased reliability with the business-oriented Enhancer? Only time will tell which option appeals more to the discless Commodore user. ◀

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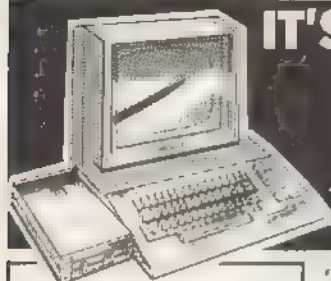
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Renumber

Dr Paul Mooney

This routine features the ability to correctly reassign all *Goto*, *Gosub*, *Restore* and *List* statements, even when the reference made is to lines which do not exist or are beyond the end of the program.

Enter the hexadecimal code and the checksums line by line using the hex-loader provided, and save it with Save "Renumber" Code 64000. 542.

To call the routine enter *Randomize User* 64000 and enter your first desired line number followed by the line number increment. Simply pressing *Enter* results in the routine defaulting to a value of 10.

BASIC Listing for May loader:

[illegible]

HEXADECIMAL CODE FOR RELEASED

1. 2000-2001-2002-2003-2004-2005-2006-2007-2008-2009-2010-2011-2012-2013-2014-2015-2016-2017-2018-2019-2020-2021-2022-2023-2024-2025-2026-2027-2028-2029-2030-2031-2032-2033-2034-2035-2036-2037-2038-2039-2040-2041-2042-2043-2044-2045-2046-2047-2048-2049-2050-2051-2052-2053-2054-2055-2056-2057-2058-2059-2060-2061-2062-2063-2064-2065-2066-2067-2068-2069-2070-2071-2072-2073-2074-2075-2076-2077-2078-2079-2080-2081-2082-2083-2084-2085-2086-2087-2088-2089-2090-2091-2092-2093-2094-2095-2096-2097-2098-2099-2100-2101-2102-2103-2104-2105-2106-2107-2108-2109-2110-2111-2112-2113-2114-2115-2116-2117-2118-2119-2120-2121-2122-2123-2124-2125-2126-2127-2128-2129-2130-2131-2132-2133-2134-2135-2136-2137-2138-2139-2140-2141-2142-2143-2144-2145-2146-2147-2148-2149-2150-2151-2152-2153-2154-2155-2156-2157-2158-2159-2160-2161-2162-2163-2164-2165-2166-2167-2168-2169-2170-2171-2172-2173-2174-2175-2176-2177-2178-2179-2180-2181-2182-2183-2184-2185-2186-2187-2188-2189-2190-2191-2192-2193-2194-2195-2196-2197-2198-2199-2200-2201-2202-2203-2204-2205-2206-2207-2208-2209-2210-2211-2212-2213-2214-2215-2216-2217-2218-2219-2220-2221-2222-2223-2224-2225-2226-2227-2228-2229-2230-2231-2232-2233-2234-2235-2236-2237-2238-2239-2240-2241-2242-2243-2244-2245-2246-2247-2248-2249-2250-2251-2252-2253-2254-2255-2256-2257-2258-2259-2260-2261-2262-2263-2264-2265-2266-2267-2268-2269-2270-2271-2272-2273-2274-2275-2276-2277-2278-2279-2280-2281-2282-2283-2284-2285-2286-2287-2288-2289-2290-2291-2292-2293-2294-2295-2296-2297-2298-2299-2300-2301-2302-2303-2304-2305-2306-2307-2308-2309-2310-2311-2312-2313-2314-2315-2316-2317-2318-2319-2320-2321-2322-2323-2324-2325-2326-2327-2328-2329-2330-2331-2332-2333-2334-2335-2336-2337-2338-2339-2340-2341-2342-2343-2344-2345-2346-2347-2348-2349-2350-2351-2352-2353-2354-2355-2356-2357-2358-2359-2360-2361-2362-2363-2364-2365-2366-2367-2368-2369-2370-2371-2372-2373-2374-2375-2376-2377-2378-2379-2380-2381-2382-2383-2384-2385-2386-2387-2388-2389-2390-2391-2392-2393-2394-2395-2396-2397-2398-2399-2400-2401-2402-2403-2404-2405-2406-2407-2408-2409-2410-2411-2412-2413-2414-2415-2416-2417-2418-2419-2420-2421-2422-2423-2424-2425-2426-2427-2428-2429-2430-2431-2432-2433-2434-2435-2436-2437-2438-2439-2440-2441-2442-2443-2444-2445-2446-2447-2448-2449-2450-2451-2452-2453-2454-2455-2456-2457-2458-2459-2460-2461-2462-2463-2464-2465-2466-2467-2468-2469-2470-2471-2472-2473-2474-2475-2476-2477-2478-2479-2480-2481-2482-2483-2484-2485-2486-2487-2488-2489-2490-2491-2492-2493-2494-2495-2496-2497-2498-2499-2500-2501-2502-2503-2504-2505-2506-2507-2508-2509-2510-2511-2512-2513-2514-2515-2516-2517-2518-2519-2520-2521-2522-2523-2524-2525-2526-2527-2528-2529-2530-2531-2532-2533-2534-2535-2536-2537-2538-2539-2540-2541-2542-2543-2544-2545-2546-2547-2548-2549-2550-2551-2552-2553-2554-2555-2556-2557-2558-2559-2560-2561-2562-2563-2564-2565-2566-2567-2568-2569-2570-2571-2572-2573-2574-2575-2576-2577-2578-2579-2580-2581-2582-2583-2584-2585-2586-2587-2588-2589-2590-2591-2592-2593-2594-2595-2596-2597-2598-2599-2600-2601-2602-2603-2604-2605-2606-2607-2608-2609-2610-2611-2612-2613-2614-2615-2616-2617-2618-2619-2620-2621-2622-2623-2624-2625-2626-2627-2628-2629-2630-2631-2632-2633-2634-2635-2636-2637-2638-2639-2640-2641-2642-2643-2644-2645-2646-2647-2648-2649-2650-2651-2652-2653-2654-2655-2656-2657-2658-2659-2660-2661-2662-2663-2664-2665-2666-2667-2668-2669-2670-2671-2672-2673-2674-2675-2676-2677-2678-2679-2680-2681-2682-2683-2684-2685-2686-2687-2688-2689-2690-2691-2692-2693-2694-2695-2696-2697-2698-2699-2700-2701-2702-2703-2704-2705-2706-2707-2708-2709-2710-2711-2712-2713-2714-2715-2716-2717-2718-2719-2720-2721-2722-2723-2724-2725-2726-2727-2728-2729-2730-2731-2732-2733-2734-2735-2736-2737-2738-2739-2740-2741-2742-2743-2744-2745-2746-2747-2748-2749-2750-2751-2752-2753-2754-2755-2756-2757-2758-2759-2760-2761-2762-2763-2764-2765-2766-2767-2768-2769-2770-2771-2772-2773-2774-2775-2776-2777-2778-2779-2780-2781-2782-2783-2784-2785-2786-2787-2788-2789-2790-2791-2792-2793-2794-2795-2796-2797-2798-2799-2800-2801-2802-2803-2804-2805-2806-2807-2808-2809-2810-2811-2812-2813-2814-2815-2816-281

[illegible]

◀ continued from page 43

[illegible]

1480 THE TOWN FORMS (FORMS) FORM 1
 1481 FORMS (FORMS) FORM 1
 1482 FORMS (FORMS) FORM 1
 1483 FORMS (FORMS) FORM 1
 1484 FORMS (FORMS) FORM 1
 1485 FORMS (FORMS) FORM 1
 1486 FORMS (FORMS) FORM 1
 1487 FORMS (FORMS) FORM 1
 1488 FORMS (FORMS) FORM 1
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 1496 FORMS (FORMS) FORM 1
 1497 FORMS (FORMS) FORM 1
 1498 FORMS (FORMS) FORM 1
 1499 FORMS (FORMS) FORM 1
 1500 FORMS (FORMS) FORM 1

Brother Width

If you have a Brother EP44 (or certain other printers) then you will have discovered that the *QL Width* command doesn't work when listing Basic programs. This routine not only allows you to define the line length but also where on the page the listing is to be printed. Also, the program separates line numbers and program text to make it easier to read.

with a slashed zero (Ascii 237). Also, the baud and channel definitions on line 110 may need to be altered.

```

100 DEFINE Procedure first (start,li
newline,cc
110 BAND 1200 OVER#3;cc:=newline+
120 ' ' ;cc:=cc+1;OR t:=cc+1;PRINT#1,
'Tab ending outside range';RETURN
130 IF t>cc+li-1;cc:=cc+20;PRINT#0,li
line length outside range';RETURN
140 OVER;IN#4;cc$
150 Repeat loop
160 lines$=""
170 IF newline:lines=
180 FOR n=1 TO lines/cc
190 IF FOR(#4);EXIT loop
200 IS=INVER#(n)
210 IF IS=INVER#10;newline+1;EXIT n
220 IF IS=INVER#13;cc:=cc+20;
230 lines=lines+$
240 newline=0
250 END FOR n

```

```

280 IF I=1 THEN 'PRINT#3,TO label+6,
line:
290 END REPEAT loop
300 PRINT#3
310 END DEFINE
320
330 DEFINE procedure linenum
340 local '
350 FOR i=1 TO 6
360 IF EOF(#6):RETURN
370 i=INKEYS(#6).IF i$.'0' OR i$.'9'
EXIT i
380 IF i=CHR$(48)-i=CHR$(237)
390 i=i+1
400 END FOR i
410 PRINT#3,TO label,linos:
420 FOR i=1 TO 5:PRINT#3,CHR$(32);
430 END DEFINE

```


◀ continued from page 45

[illegible][illegible]

```

root and...."
5080PROCwait
5090g2=RN(2)
5100g3=0
5110IF (col=score1) AND g=1 THEN g2=2
5120IF (col=score2) AND g=2 THEN g2=2
5130IFg=1 AND g2=1 THEN col=col+1
5140IFg=2 AND g2=1 THEN col=col+1
5150IFg2=1 THEN pr$="it's a GOODAAALLL
      "SOUND(1,20,10)
5160IFg2=2 THEN g3=RN(14)
5170IFg3=1 THEN pr$="it's saved by the
      ceaser,"
5180IFg3=2 THEN pr$="it's cut over the
      top,"
5190IFg3=3 THEN pr$="it's knocked wide o
      f the post,"
5200IFg3=4 THEN pr$="it hits the woodwo
      rd and is cleared,"
5210PRINT"AB(1,2):pr$
5220PROCoff
5230PROCdouble_height(STR$(col),18,7)
5240PROCdouble_height(STR$(col),21,7)
5250PROCwait
5260IF (score1=col) AND (score2=col) T
      EN "=="
5270UNTIL(score1=col) AND (score2=col)
      AND "=="
5280SOUND(1,1,12,1)
5290PRINT"AB(1,2):" (Full Time)
"
5300FORZ=1,14,36,10:PROCoff:GOTO5306
5310ENDPROC
5320ENDPROCwait
5330FORP=1,10:GOTO5335NEXT
5340ENDPROC

```

Programming: Commodore 64

Disc Help

Gary Mavhew

After running the program two menus are displayed, Disc and Printer. Press either D or P.

From this menu you will be offered a variety of options which are explained as follows.

Directory displays the contents of a disc. *Scratch* deletes a file. *Initialise* reads disc ID etc (after disc change).

Validate collects all the files to free unused blocks.

Format prepares ■ blank disc for use.

Rename gives a file a new name.

Error is used when the red light flashes, to check the error.

Blocks checks how many free blocks there are on the disc.

Quit disc returns you to the main menu.

As this ■ a two part listing details of the Printer menu will be given next week.

[illegible]


```

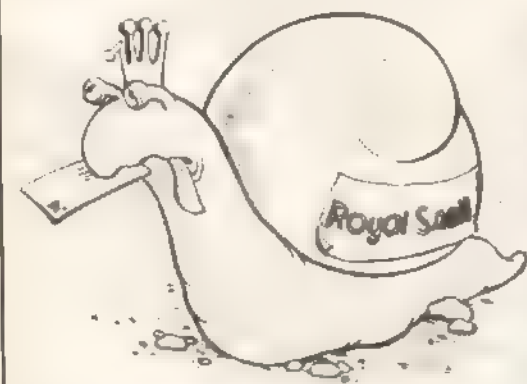
100 REM ***** COMMODORE 64 *****
110 REM ***** BASIC *****
120 REM ***** PROGRAM *****
130 REM *****
140 REM *****
150 REM *****
160 REM *****
170 REM *****
180 REM *****
190 REM *****
200 REM *****
210 REM *****
220 REM *****
230 REM *****
240 REM *****
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260 REM *****
270 REM *****
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300 REM *****
310 REM *****
320 REM *****
330 REM *****
340 REM *****
350 REM *****
360 REM *****
370 REM *****
380 REM *****
390 REM *****
400 REM *****
410 REM *****
420 REM *****
430 REM *****
440 REM *****
450 REM *****
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120 REM ***** PROGRAM *****
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Kirk

Starfield

A W R Crawford

for any Atari 8-bit micro

This program for any eight bit Atari machine will produce, when run, an interrupt driven scrolling starfield which can easily be incorporated into your own games to give them that professional look.

```
10GRAPHICS 7:M=PEEK(741)+256*PEEK(742)
20P=INT((M-2048)/2048)*2048:M=P+768
30POKE 54079,P/256:POKE 52055,0:POKE
52077,1
40FOR X=M TO M+255:POKE X,0:NEXT X
50FOR X=M+27 TO M+190 STEP 2:POKE X,5
60NEXT X
70FOR Y=128 TO 194:READ D:POKE Y,D:
NEXT Y
80FOR X=194 TO 179:POKE X,PEEK(5477)
90NEXT X
91D=PEEK(551)+256*PEEK(551):POKE D,3:
92FOR X=D+2 TO D+9:POKE X,141:NEXT X
93POKE 510,51:POKE 510,0:POKE 512,56:P
OKE 513,5:POKE 517,14:POKE 5199,141
100DEFINT I=0:NEXT "SCROLLING STARF
IELD DEMONSTRATION":STOP
110DATA 32,118,72,17,11,10,189,128,6
,141,7,208,120,128,6,104,170,104,64
```

Fast Printer

Arnt Gulbrandsen

for the Amstrad CPCs

This machine code routine for any Amstrad CPC speeds up screen printing ■ Mode 2 by around 35% Note however, that transparent printing is disable. As this routine uses locations &BE80 to &BEA3 you should avoid using this area.

```
10 CALL &BE51:FOR n=0 TO 25:POKE n+&BE80,
VAL("&"+MID$("f55d54cd1abc79cd1fe0179ebc2
0000cda5b5bcd06b9015f073e08ed=00ceb09eb3d
20f7c9",n*2+1,2)):NEXT:POKE &BE8D,PEEK(&
BDD4):POKE &BE8E,PEEK(&BDD5):POKE &BDD3,
195:POKE &BDD4,&90:POKE &BDD5,&9E
```

Disc Turbo

Arnt Gulbrandsen

for the Amstrad CPCs

This routine for the Amstrad CPC series, sits at &BE80 and speeds up the disc drive by 10%-30%. It is compatible with any piece of software which does not use memory at location &BE80.

```
10 CALL &BE57:IDISC=FOR n=0 TO 33:POKE n
+&BE80+n,VAL("&"+MID$("2d00640001040a01030
0000082210cbecdd4bcd92209be79320bbe2100b
edf09bec9",2*n+1,2)):NEXT:CALL &BE8D
```

We want your programs

Yes, this is your chance to get rich and famous. Well, famous anyway, as *Popular Computing Weekly* is looking for contributions to the Programming pages.

What sort of thing are we looking for? You name it - anything original from games to utilities, applications and the like, written in Basic, machine code or anything else you can think of.

Programs for any computer will be considered, not just the old faithfuls

(Spectrum, Amstrad, QL, Commodore, etc), so send your listings in for your favourite micro. What we need is a working copy of the program on tape or disc, plus an accompanying article or documentation that you would anticipate going with the piece, normally not over 2000 words.

Alternatively, send in your short programs to the Bytes and Pieces page - what could be easier? In return, we'll pay the princely sum of £25 per page for the

main programming pages and £10 for each Bytes & Pieces contribution we publish. Plus the fact that your name will be indelibly carved in the *Popular Programming Hall of Fame* till time immemorial. What more could any true programmer ask?

Just send your masterpieces in to **Duncan Evans, Technical Editor, Popular Computing Weekly, 12-13 Little Newport St, London WC2H 7PP** and he'll assess them post haste.



With Kenn Garroch

Machine code multiplication

P Andrews, of Dover, in Kent, writes:

Q I am writing a computer game in machine code and need to multiply a selection of numbers together. Could you tell me how this is done in machine code (6502) and how to implement it on a Commodore 64?

A The fastest method of multiplying numbers on a computer is to create a table of all the possible

a lot faster than adding a number to itself the number of times specified by the other.

Take two numbers - 10x5 for example. In binary these are 1010 and 0101 (I'll use four-bit numbers here but the same rules apply to larger eight- or 16-bit solutions). To multiply them together, shift the smaller right one place (LSR). If the carry is set then add the larger number to the result (currently zero). If the carry is not set then don't add and carry on.

Now shift the larger number left one place, ie, multiply by two (ASL). Then go back and shift the smaller one right. In the example the carry would not be set, so shift the larger one left again and shift the smaller right. Now the carry is set so add the shifted larger number to the result. If the smaller number is now zero, the multiplication is done.

Step 1

1010; 0010 C=1 (small shifted right one place)
Add 1010 to result;
result=1010
Is small zero? No, so continue ...

Step 2

10100; 0001 C=0 (big shifted left, small right)

MS	BYTE	■	MS SMALL MB BIG MR RESULT 16BIT
MB	WORD	■	THESE NEED TO BE IN ZERO PAGE
MR	WORD	■	FOR GREATEST SPEED
MULT	LDY #0		Y USED FOR COMPARE AND ZEROING
	STY MB-1		ZERO ■ BYTE OF MB
	STY MR		ZERO THE RESULT LO
	STY MR-1		ZERO THE RESULT HI
MULTL	LSR MS		SHIFT SMALL RIGHT
	BCC ADD1		IF CARRY THEN ADD BIG TO RESULT
MULTL	CPY MS		IF SMALL ZERO THEN END
	BEQ FIN		
	ASL MB		SHIFT BOTH LO AND ■
	ROL MB-1		BYTES OF MB LEFT INCL CARRY
	JMP MULTL		CONTINUE SHIFTING AN ADDIN
ADD1	CLC		CLEAR CARRY FLAG FOR ADDITION
	LDA MB		GET MB AND ADD
	ADC MR		TO ACCUM AND
	STA MR		THEN RESULT
	LDA MB-1		SAME WITH ■ BYTE (INCL
	ADC MR-1		CARRY
	STA MR-1		
	JMP MULTL		JUMP TO BIG SHIFT AND CONTINUE
FIN	RTS		RESULT ■ MR AND MR-1 LO HI BYTES

answers and look up the answer using the two numbers to be multiplied. The problem here is that if you have a lot of answers, too much memory is taken up with the table. The other answer is to use the shift and add method which is

No add since C=0)

Is small zero? No, so continue ...

Step 3

101000; 0000 C=1 (big shifted left, small right)
Add 101000 to result;
result=110010

Is small zero? Yes, so end. Answer is 110010, or 50, which is correct.

The reason for using the small number to check for additions is that it will reach zero sooner than larger number.

Implementing this in 6502 will result in the subroutine for 8 x 8 bit given here.

Numbers only

Lee Short, of Cathays, in Cardiff, writes:

Q I have recently written a program for my firm on my Amstrad 464 computer. My problem is that I would like to disable the Escape key and, at the beginning of the program, the user is asked to input a number between one and 12. If a letter is typed, I get a redo from Start? - how can I adapt my program to accept only numbers when required?

A The Escape key is disabled by including the *On Break GoSub* command as the first line of the program. For example:

```
10 ON BREAK GOSUB 100
20 PRINT "THIS PROGRAM IS UNSTOPPABLE"
30 GOTO 20
100 PRINT "YOU HAVE PRESSED BREAK"
110 FOR T=0 TO 1000:NEXT T
120 PRINT "BUT TO NO AVOID"
130 RETURN
```

Your second problem can be solved by use of the following subroutine. Instead of input A, use *GoSub 1000* and include this:

```
1000 LOCATE 1,10: INPUT "ENTER NUMBER (1-12):" NS
1010 IF VAL(NS)=0 OR VAL(NS)>12 THEN GOTO 1000
1020 N=VAL(NS) ■ THE NUMBER ENTERED
1030 RETURN
```

This gets a string and then checks whether the first characters are numerical and less than 13. Otherwise the input is requested again, but by using *Locate*, it is not too obvious to the user that a mistake has been made, ie, you don't fill up the screen with unwanted inputs.

Linking Atari and Amstrad

A Harvey, of Worcester Park, Surrey, writes:

Q I own a CPC 464 and a printer, but recently, a friend got an Atari STM, and it impresses me so much that I am seriously considering buying one. Is it possible to link the Amstrad CTM 640 colour monitor to an Atari 520 STM?

A The Atari ST colour output is standard RGB and its socket has the following pinout:

- 1) Audio out, from the internal amplifier.
- 2) Not connected.
- 3) General purpose output from port A, bit 6, of the sound chip, uses TTL levels.
- 4) Monochrome detect. If this pin is low, the computer enters high res monochrome mode. Obviously, for colour, you'll need to tie it high.
- 5) Audio to the internal amplifier, mixed with the output of the sound chip.
- 6) Green output for RGB.
- 7) Red output for RGB.
- 8) Ground.
- 9) Horizontal sync output.
- 10) Blue output for RGB.
- 11) Monochrome intensity output.
- 12) Vertical sync output.
- 13) Ground.

Amstrad connection is:

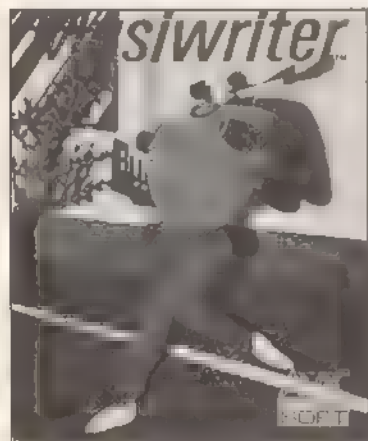
- 1) Red input for RGB; 2) Green input for RGB; 3) Blue input for RGB; 4) Sync; 5) Ground; 6) Lum;

So to connect the two together, red goes to red, green to green, blue to blue, and the two grounds are connected together. Pin six on the monitor needs to be held high as does pin four on the ST. I think the sync for the monitor goes to the vertical sync on the ST ■ this does not work, try the horizontal sync.

As far as I know, there is no plug available to fit (see illustration) the 13 pin connector on the ST. It is possible to construct one from perforated board with 1/8" pitch. Solder in the array of twelve pins and ignore pin 13 which is out of order and unnecessary since pin 8 is also ground. You will need an in-line 13 pin Din socket to make the connection to the monitor.

Music for the MSX

Mark Jenkins looks at the packages available to help you get started on the MSX machines.

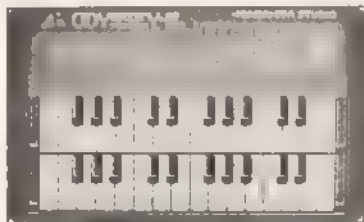


Despite the relative failure of the MSX system over there, worldwide the standard is quite active, particularly in France, Germany and Japan. A recent visit to the Paris Music Fair certainly showed that MSX is finding a lot of musical applications, along with the Thomson computers and a couple of other models not generally available in the UK.

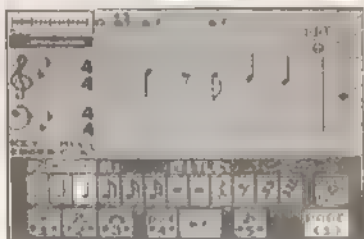
The most professional packages available for the MSX series are the Yamaha CX5-related Midi packages – the new SFG-01 Tone Module and its related software for drum machine and synthesiser composition, sound editing and so on. An MSX sampler is on its way and several small independent companies are developing improved software which overcomes some of the limitations of Yamaha's original designs.

One of these limitations is that the Yamaha CX5 Music Computer stood outside the MSX convention by adding a cartridge port underneath the machine – this is where the FM synthesiser module fits. However, it's now possible to buy a synth module separately and fit it using a small interface card, which you have to build yourself using about three pounds' worth of circuit board and etching fluid. The Yamaha X-Series Owners' Club have a free sheet giving information on how to do this.

So there's now a good path into MSX computer music – start with a cheap machine (a Canon, Sony, Mitsubishi or other model with two cartridge slots is best, and many of these are now available at knock-down prices). Add an inexpensive software package which



▲ Odyssey-K ▼ Musiwriter



makes use of the micro's built-in three voice sound chip, and if your interest in music continues, go for the Yamaha tone module, which features Midi and so allows you into the world of professional synthesisers, too.

Two new packages from Rittor Music are worth looking at. The cartridge-based *PSG Musiwriter* (£24.95) starts with a screen display of a staff with treble and bass clefs, key and chord name and a data box on the bottom of the screen. You can compose tunes using three voices by entering notes one at a time; five main pages are used in the data box to vary 1) musical notation, 2) repeat symbols and rhythm, 3) chord, 4) time/key/titile/load/save, and 5) display colour and volume mix.

The pages are accessed using the function keys 1–5, a green bar at the top of the screen shows memory remaining. To write a piece you choose a voice and note length, enter notes using the cursor up-down arrows and return key (the notes sound as you're entering them and the pitch is displayed to the right of the screen), and choose a volume from the dynamics page. Of course, it's possible to erase notes you don't want simply by using *Delete*, and you can type in a tempo using the number keys.

You can insert and delete entire bars, and choose from any of seven backing rhythms (only waltz can't be used when programming in 4/4 time) which play with a selection of white noise bursts. *PSG* has a very clear handbook but



unfortunately there's no demo program, and the suggested 'music input example' in the handbook looks pretty complex.

But it's easy enough to punch notes in, and the backing chords and rhythms give a fairly complex end product. The screen displays are colourful and the handbook good, so the package represents a fine way into music and should be highly educational. It's for 16 to 64K machines.

Odyssey-K (£11.95) is a little more unusual, and loads from tape. It's a real-time recorder which uses four banks of the computer's keys as a four-octave double music keyboard, and there's a metronome bleep to play along to as you record each of the three available tracks.

Compositions can be saved and re-loaded and there's a good demo of (what else?) *The Entertainer*. A 32K machine is needed for this program and, of course, once you've learned music theory from *PSG*, this is an ideal way to begin to stretch your 'live' playing abilities.

The pitch of each track can be transposed, you can erase and re-record a track, adjust tempo and volume mix, repeat sections, and change tones to some extent, using the *Env* command.

A pity that *Odyssey* won't be compatible with a clip-on mini-keyboard such as the *Music Maker*, but it's still good fun, with a neat screen display of an impressive-looking double keyboard and a very simple command layout.

DX7 owners will be interested to learn that Rittor also markets two Rom cartridges in the Shofuku series; Part 1 has 2 x 32 sounds including some good guitars, basses, metallic keyboard sounds, special effects, strings and winds, while Part 2 has another 64 sounds including more modern FM presets, Eastern sounds and synth effects.

Yamaha X-Series Owners' Club, Mount Avenue, Milton Keynes MK1 1JE, Tel 0908 71771.

If you have any queries or tips for this column, please write to Mark Jenkins at *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 7PP. Mark would also welcome examples of your own music on audio or program tape, or disc.



Bulletin boards for ST owners

David Wallin consults his mailbag, and explains ROS, discovers two BBs for the ST, and shows you how to transmit hi-res pictures over the PSTN

More correspondence to go through this week, and it appears that I have an apology to make. It's to Compunet: the price of the Commodore modem has been £49.95 all year, apparently I must have said otherwise at some time. Sorry Compunet about this, and I hope it has not caused any problems.

Now for some information on a new BB operating on the Amstrad PCW 8256. First the board itself, and then the ROS system that it runs under.

The board is called PCW ROS, the sysop is Mark Gregory, hours are 8am to 5.30pm, 8pm to 5.30am (24 hours soon). Catch it on 0902 788683 and at these rates: 300/300 (1200/75 soon).

ROS: the system

The BB runs under the Steve Fox ROS system. ROS is a new BBS written in Turbo Pascal. The Amstrad PCW8256 is one of the many computers which can use ROS, a friendly and nice piece of BBS, which new users should find logging on to easy. PCW ROS runs on a two-drive, Ram upgraded Amstrad PCW8256. This gives 368K of Ram disc and 1.2Mb of floppy disc storage.

The advantage of using the Ram disc to store the main code of the program, menus and messaging section is that it makes the speed of the board fantastic, with access time almost instant. The floppies are used for storing download software only. The board is probably the fastest in the country.

While PCW ROS does specialise in the 8256, it also contains information for other computers and subjects, including amateur radio, IBMs, Spectrums, Commodores, aircraft enthusiasts and more.

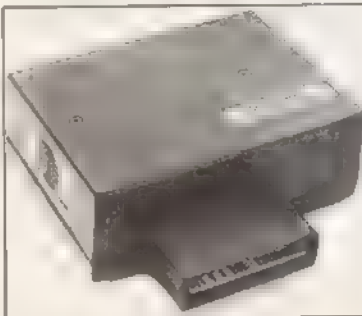
The sysop, Mark Gregory, can supply an installed version of the ROS system for the Amstrad PCW8256 at a cost of £15. For this he will require details of your modem and serial port. The cost is only to cover disc, copying, compiling and the two overlays required. Profit is not made as the program is public domain.

More details on buying the program will be available from Mark if you log on to PCW ROS and ask him. One problem with buying a compiled version rather than the source code is that you will not be able to make any modifications to it. Turbo Pascal is expensive to buy and so

the compiled version may be the only option for most people.

He will also supply a copy of UKM7 on a disc for £7, which is cheaper than the download costs at 300/300, and again details will be available from Mark if you log on. He is also working on enabling Mail232 users to download it, because Mail232 does not have proper download facilities. This will enable people to download the software without needing further expensive software to do it.

Bulletin boards are popping up all over the place for the Atari ST, including two which I've had correspondence about. The information about these two



The Commodore modem: £49.95

boards was sent in by Harvey Mills of Slug, the ST London users group. The first board is ST London BBS which includes Slug.

Stephen Page is the sysop, and the board runs from midnight to 9am. The phone number is 01-443 2432, and speeds are 300/300 and 1200/75.

This board is purely for the ST and has downloads, etc. dedicated to it.

He also sent me some information on another BB on the ST, run by Microdeal (the software company). This is not an ST dedicated board, though it does contain a lot of ST relevant information and some IBM stuff as well. This is the Microdeal BBS, running 24 hours, on 0726 65422, 300/300 and 1200/75.

Finally it was also pointed out to me that both these boards have the public domain (free!) program XModem, for the ST, available for download.

Now for some answers to questions left on Prometheus, the BB where you can contact me directly. Firstly, from

Mike Lang: "Is it possible to transmit high-res pictures from an Amstrad over the PSTN?"

Yes it is, Mike, but some knowledge of the serial port and memory map of the computer(s) involved will be required. A program will have to be written to perform two simple tasks, read the value of a pixel and transmit it. This is enclosed in a simple loop to include the entire screen.

In pseudo code, the transmit program would look something like this:

```
10 LOAD in screen
20 FOR loop-start to finish
30 A=PEEK(loop)
40 SEND A
50 NEXT
```

Line 10 loads in a high-res screen. Line 20 sets up a loop, from the start of screen memory (start) to the end of screen memory (finish). Line 30 reads the location of the screen. Line 40 sends the value of A to the serial port (modem). Line 50 loops.

The receiving program is similar and looks something like:

```
10 FOR loop-start to finish
20 RECEIVE A
30 POKE loop, A
40 NEXT
```

Line 10 sets up the loop. Line 20 gets a value from the serial port (modem). Line 30 pokes that value to the screen. Line 40 loops.

The screen memory is the location in the computer's memory in which the information about the screen is stored. The technical or hardware reference manual for the computer should give the screen memory addresses. In theory it should be possible to send any computer's screen (Amstrad, BBC, etc) to any other computer (Commodore, Spectrum, etc). The receive program would need adaptations as the resolutions of the screens are likely to be different.

Although it may seem quite complicated, it isn't really, a simple program does all the complicated stuff. One point, even at 1200/1200 full duplex, sending a screen does take quite a long time. I hope the above is of some use to you, Mike, and anyone else who wishes to send high-res screens over the PSTN.

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SPECTRUM 48k software for sale, 45 games in total. Worth £310, will sell for £99. Games like Ace, T7, Racer. Also Kompston interface + joystick £11. Tel: David on Rickmansworth 721255.

AMSTRAD PCW 8512 never used. Bought in August, leaving country. Everything included, £520. Tel: 01-993 1928.

John Cook looks through this week's new arrivals

Amstrad CPC

Program Miami Dice Type Simulation **Micro** Amstrad CPC **Price** £12.99 **Supplier** Bug Byte, Argus Press Software, Victory House, Leicester Place, London WC2H 7NB.

Program Glider Rider Type Arcade **Micro** Amstrad CPC **Price** £8.95 **Supplier** Quick-silver, Argus Press Software, Victory House, Leicester Place, London WC2H 7NB.

I was trying to knock out the HQ of a highly suspect arms manufacturing multinational, you can be sure that



I'd be packing more than one motorbike/hanglider and nine hand grenades - but still, in show biz, them's the breaks. This is the Amstrad version of the Spectrum game that has the best sound ever on the 128/Plus 2, sampled effects and. No such luck on the CPC, but the well designed 3D graphics and smooth scrolling are still there.

Program Colossus 4.0 Bridge Type Strategy **Micro** Amstrad CPC **Price** £11.95 (tape), £14.95 (disc) **Supplier** CDS Software, CDS House, Berkett Road, Doncaster DN2 4AD.

Program Eidolon Type Arcade **Micro** Amstrad CPC **Price** £9.99 (tape), £14.99 (disc) **Supplier** Activision UK, Activision House, 23 Pond Street, Hampstead, London NW3 2PN.

Program Steethawk Type Arcade **Micro** Amstrad CPC **Price** £8.95 **Supplier** Ocean Software, 6 Central Street, Manchester M2 5NS.



Program Lightforce Type Arcade **Micro** Amstrad CPC **Price** £8.95 **Supplier** Faster Than Light, Sedgley Road East, Tipton, West Midlands DY4 7UJ

Another Amstrad version of a Spectrum title - but wow, it is good or what?

Colourful graphics without hideous attribute problems aren't as rare on the CPC as they are on the Spectrum - so the effect isn't, initially, as mind blowing, but again, it is the graphic design that makes this program really stand out.

Bright, detailed and fast - OK, so it's autofire on, brain off (mostly) but shoot 'em ups don't usually come this good. "FTL - the company that makes games as good as its sweatshirts". Catchy, eh? I was in advertising in my last reincarnation, you know.

Atari

Program Starquake Type Arcade **Micro** Atari XL/XE **Price** £8.95 tape, £12.95 disc **Supplier** Bubble Bus, 87 High Street, Tonbridge, Kent TN9 1RX.

Atari ST

Program Starglider Type Arcade **Micro** Atari ST **Price** £24.95 **Supplier** Rainbird, 74 New Oxford Street, London WC1.

Program Mighty Mail Type Application **Micro** Atari ST

Living the American

Program Hardball Type Arcade **Micro** Spectrum **Price** £8.95 **Supplier** Advance, 17 Staple Tye, Harlow, Essex.

It's a well known fact that the Americans alone are responsible for the serious moral decline in this country.

First they bring us that American Football business with people giving each other five over the place, messages from sponsors and that nasty amber coloured fluid with wood chips in, or something that is probably the second worst lager in the world. And now? Now, rounders

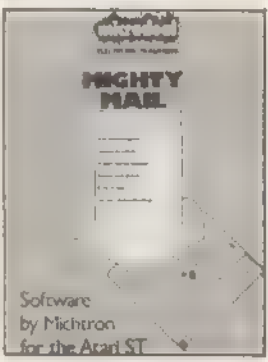
But being Americans, they don't call it rounders. Never let it be said that the Yanks don't miss an opportunity to call a spade a manual excavating implement, given half the chance. No. They call it hardball.

Good grief. Grown men dressed in very very, silly clothes, all with genetically manipulated hands, standing around, not playing cricket. It's a scandal... still, at least you don't have to wear any silly clothes at all or be genetically defective to play the computer version.

Hardball on the Spectrum is an excellent version of the US Gold game that made the

Price £29.95 **Supplier** Microdeal, Box 68, St. Austell PL25 4YB.

If you're running a business or a club, then a mailing list is probably one of the most useful applications you can have. Now, from Micro-



deal, exclusive UK importers of Michtron ST product, comes a computerised mailing list for your ST. *Mighty Mail*

Essentially, the program is a database type program (with numbers of records only limited by space - that's around 1,400 on a floppy, up to 65,000 on a hard disc) in which you can assign 'flags' to each file. For instance, if it was a database of computer users, you'd set flags according to which computers and peripherals were owned by individuals. *Mighty Mail* has up to 16 user defined flags.

The clever bit comes when you want to print out, say,

address labels for a particular mail shot. What about if you want to hit QL owners only? Or maybe QL owners that have disc drives? Simple, you simply set the program to print out files with these flags set, and away you go.

As with all good ST software, the whole thing is run under Gem, so is fairly straightforward and easy to use - although, as with many Michtron manuals, I found the content and design a little under par for the money.

Commodore 64

Program Soldier One Type Arcade **Micro** Commodore 64 **Price** £9.95 (tape), £14.95 (disc) **Supplier** American Action AB, Box 10090, 200 43 Malmö, Sweden.

It's always nice to see offerings from beyond these shores - quite often they have a flavour strikingly different from the run of the mill English games - take *Ere Informatique* and *Infogrammes* for example.

Not so with *Soldier One* I'm afraid - it draws heavily from *Beachead* I and II to produce as bland a number I've seen in many a day.

It consists of seven screens which, from 'Behind the Cannon' (deserving of a Mike Yarwood award for originality, alone) to 'Enter the Island' (so

Dream

charts earlier this year. The graphics on the pitching (bowling to you) screen are almost identical to the Commodore, and although the fielding screen is relatively poor, the gameplay is identical.

It's for one or two players, so if you're getting into the game on the telly, then this must be the one to play during the commercials.

Get down. Stay down. Rock and roll. Cool it. Nuke the Reds. Coke is it. God Bless America. Is there no hope for the youth of today? I'm convinced it's all a Channel 4/CIA conspiracy.

primitive that it would be funny, apart from the fact that you're being asked to pay £9.95 for the deal) simply fail to inspire.

SOLDIER ONE



State-of-the-art in Sweden doesn't seem to stretch to disabling *Restore* either.

Passable at budget price – at a tanner this is a big no-no.

Program Herakles – The Early Years Type Adventure **Micro** Commodore 64 **Price** £6.95 **Supplier** Tunstallsoft, 17 Victoria Park Road, Tunstall, Stoke-on-Trent ST6 6DX.

Program Streethawk Type Arcade **Micro** Commodore 64 **Price** £8.95 **Supplier** Ocean Software, 8 Central Street, Manchester M2 5NS.

Program The Great Escape Type Arcade/Adventure **Micro** Commodore 64 **Price** £8.95 **Supplier** Ocean Software, 6 Central Street, Manchester M2 5NS.

Program Fist II – The Legend Continues Type Arcade **Micro** Commodore 64 **Price** £9.95 **Supplier** Melbourne House, 60 High Street, Hampton Wick, Kingston upon Thames, Surrey KT1 4DB.



Program Trap Door Type Arcade **Micro** Commodore 64 **Price** £7.95 **Supplier** Piranha, 4 Little Essex Street, London WC2R 3LF.

You've seen the TV program – at last – now why not play the Commodore version of this off-beat lateral thinking title.

Lots of large colourful sprites and puzzles that'll get you thinking. A refreshing change from the kill and maim routine.

Program The Archers Type Bookware **Micro** CBM 64 **Price** £9.95 **Supplier** Mosaic Publishing, 187 Upper Street, Islington, London N1 1RQ.

The Archers. Surely one of the great British institutions? Personally I feel that anyone that hasn't experienced this wondrous parody of the English Way of Life is missing a very significant experience.

Will David and Sophie ever have a full 'adult' relationship? Isn't it about time that Brian was knocked down by a bus? When is Nelson going to make his first million? Is Jack ever going to propose to Caroline? These and other questions constantly come up in that grand-daddy of soap operas that makes East-Enders look like a story of everyday London folk.

The problem is, whatever did Mosaic think it was doing turning this ancient cornerstone of the Establishment into a computer game?

Long memories will recall that *Adrian Mole* was a product of Mosaic/Level 9, and it is unfortunate that *The Archers* suffers from the same lack of memory problems.

The whole of the 'Bookware' concept is not that you have complete control over events, but you 'guide' a character through a particular situation after the scenario has been described, via a series of three choices.

Thus, the thing acts a little like an expert system – but immediately, on systems that are predominantly tape based, runs straight into memory problems.

In the case of *The Archers*, the solution to this problem is to have four parts – the thing – in each part you (as a trainee scriptwriter) take on the role of one of four characters and must guide them through various trials and tribulations, with a sharp weather eye on the audience ratings.

Keep the ratings high and the controller of Radio Four happy, and you progress onto the next character. If the audience declines, or the BBC deems you have done something too naughty to be put on air (like facing David's and Sophie's drinks) you're fired.

Great though *The Archers* is (and any fan of the program will love it), memory has been wasted on average graphics, and the limited choices that remain allow you to finish the

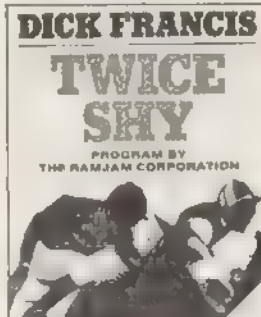
for the average person – so unless you are an avid Archers' fan, you might do better to save your tanner and spend it down The Bull on a few pints of Shires.

MSX

Program Football Manager Type Strategy **Micro** MSX **Price** £8.95 **Supplier** Endurance Games, 28 Little Park Gardens, Enfield, Middx EN2 6PG.

Spectrum

Program Twice Shy Type Adventure **Micro** Spectrum **Price** £9.95 **Supplier** Mosaic, 187 Upper Street, London N1 1RQ.



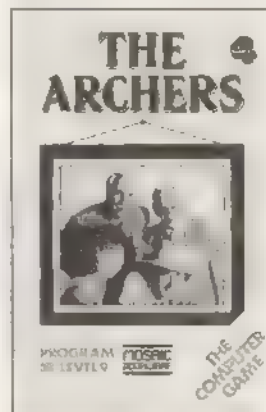
Program Colossus 4.0 Bridge Type Strategy **Micro** Spectrum **Price** £11.95 **Supplier** CDS Software, CDS House, Beckett Road, Doncaster DN2 4AD.

Program The Great Escape Type Arcade/Adventure **Micro** Spectrum **Price** £7.95 **Supplier** Ocean Software, 6 Central Street, Manchester M2 5NS.

Program Dragon's Lair Type Arcade **Micro** Spectrum **Price** £9.95 **Supplier** Software Projects, Bearbrand Complex, Allerton Road, Woolton, Liverpool L25 7SP.

Program Streethawk Type Arcade **Micro** Spectrum **Price** £7.95 **Supplier** Ocean Software, 6 Central Street, Manchester M2 5NS.

Program Dandy Type Arcade **Micro** Spectrum **Price** £7.95 **Supplier** Electric Dreams, 31 Carlton Crescent, Southampton SO1 2EH.



game in an easy afternoon. One afternoon's entertainment is just not good enough

Pseudo-hobbitry in adventures

Suddenly I found myself in a small, damp and malodorous dungeon, facing the hideous claws and scarlet teeth of a leering banshee. To defend myself, I had nothing but an unlit torch, a sausage roll and a small length of string. Frankly, I felt extremely bored.

Don't tell Tony Bridge, but I've become rather impatient with adventure games. They seemed to show such promise once, back in the days when the first main-frame adventures appeared. In those days arcade games were still at the stage when a small square crept between two rectangles, and they called it ping-pong.

Since then, arcade games have developed almost unrecognisably, but some of those earliest adventures still sell - because the latest products are not significantly better.

Of course, there have been one or two developments; input parsers have marginally improved, and graphics have been added (to limit the imagination?). But the only really serious novelty has been the development of multi-user systems, which mean that any time you play you stand a good chance of being knocked about the head by any interfering wally who happens to be idling at the modem that afternoon pretending to be an orc.

There's something about wizards, and orcs that brings out the wally in everyone, and there's apparently something about the imagination of pro-

grammers that won't let them escape from the clichés of pseudo-hobbitry.

It was a clever person who first saw that a data array could represent a maze of rooms, and that players could have fun exploring it with manifold dangers on the way.

Why have so few programs tried to develop or enlarge this concept, though? Why, for example, do games still mostly consist of plodding from one location to another, as though the choice between N, E, S and W was an interesting one?

Why can't the locations of the array represent subtly different emotional or moral situations, through which players must pick their way with care? In early days, memory limitations meant that if a game was to last for any time, locations needed to be revisitable.

Now, though, large memories are the norm on new machines, and vaster stores are easily accessible from disc. Counting the kilobytes is no longer a major worry.

It won't be long, surely, before someone with a taste for words takes advantage of this new freedom, and fills a whole floppy with a labyrinth of words, revelling in the knowledge that they now have the space to go beyond the simplicities of orc-avoiding and warlock-zapping.

When they do I hope they have the courage to jettison the "You-are-there" convention, too. Once, this must have seemed a brilliant idea for actually involving the play-

er in the action, but by now it's become rather limiting.

Most people must become rather weary of the computer's untruthfulness in claiming that they're in the middle of a desolate moorland, when they're actually quite snug in their own front room.

More seriously, this convention has prevented adventure games from producing any memorable characters. When "you" is at the centre of the story, this makes for a pretty bland and faceless protagonist, I'm afraid. Other characters may make their appearance, but generally as ciphers. The player hardly thinks of them except as possible helps or hindrances. At worst, they will waste your time by continually sitting down and singing, like that infuriating Thorin.

When a genuinely original piece of interactive fiction appears, we will recognise it as new and exciting because it will find a way of letting a distinct personality speak through the computer.

You will offer advice, maybe, which will sometimes be accepted and sometimes rejected. The illusion will be created of a whole, complex and probably rather difficult person - someone you can care for, worry about, and occasionally become infuriated with.

When this character arrives, we'll have the germ of a computer novel, and the program will find an audience far wider than the current band of pixie-freaks.

George Simmers

NEXT WEEK

Competition

Got an ear for a tune and a way with words? If so, you could win a copy of *The Archers*, the computer soap opera from Mosaic.



Jet Man

From David Jones, author of Ultimate's *Jet Pac* for the BBC, comes *Jet Man*, a follow-up for you to type in and play.

Games

Hot off the duplicating machines comes the Spectrum version of Software Projects' chart-topper *Dragon's Lair*, Red Max, the follow-up to *The Last V8* from Code Masters, and more golf simulations, in the form of *Mean 18* from US company Accolade.

Hackers



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